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AMOS BRONSON ALCOTT.

THE portrait of Mr. Alcott shows a strong and well-defined face. The features, though large, are delicate, and every part of the face has its special expression. Such a face indicates the mental and motive temperaments. The first temperamental condition indicating mental clearness and activity; the second, strength of character and constitution.

The head from the opening of the ear forward seems to be long, indicating intellectual development; and from the eye and

ear upward there is unusual height, evincing a spirit of integrity, persistency, philanthropy, and a sense of the interior in the realm of the higher life. The great fullness above and near the eyes, and especially up from the root of the nose through the center of the forehead, shows uncommon power of observation, ability to gather knowledge and retain it, the power to remember in detail and to recall knowledge once acquired. That is pre-eminently a scholarly head, including hunger for knowledge, the power to gather it, the ability to hold it, combine it, and use it. He has a strong sense of the character and spirit of other people. This gives talent for reading the mental life of others, comprehending its spirit, and working it out in biography. He could be able as a historian, a biographer, and a reviewer.

He has warm sympathy—uncommonly strong Benevolence, which gives a gentleness and tenderness to his whole life. He is cautious, inclined to maintain safe relations to life, although he is also very frank and open and free in expression, on account of his moderate Secretiveness.

His back-head seems to be comparatively light, and the side-head narrow at the base, showing a lack of force of character, and of that kind of push and executive energy which enables one to be prominent, impressive, and controlling among men in general. A head that is broader in the region of the ears is more reticent, more financially wise, more courageous and energetic, with more power to push toward success and to overcome obstacles. The contrast between Mr. Alcott's head in these respects—that is, in weight of brain around the ears and in the posterior region—and the heads of such men as Commodore Garrison, Vanderbilt, James Fisk, and many others who have wielded power in the field of physical achievement, is so marked as to attract the attention of every student of human nature. If he could have had a broad base of brain, he would have made his mark in the Senate or elsewhere in the domain of mental force, or in the realm of physical enterprise. As it is, intellectual acumen, sympathy, moral feeling, taste and refinement, which arise from the anterior and superior portions of the head, are pre-eminent.

AMOS BRONSON ALCOTT, the venerable philosopher, was born in Wolcott, Conn., November 29, 1798. In his early life he did not have the educational advantages that almost every boy has at the present time, but picked up a little learning between-times at the country school, the sessions of which were short and infrequent. Like many young men of his time, who found it necessary to make their way independently in life, he took up the peddler's pack and traveled in the South, going from house to house in Virginia. While pursuing this vocation, he read much, utilizing his leisure for the improvement of his mind. Returning to Connecticut, he taught school for a while. In 1828 he went to Boston and opened a school for young children in the old Masonic Temple. In matters of social opinion he proved to be in advance of public sentiment in Boston, and he was much abused and denounced by the newspapers on account of their enunciation, and compelled to close his school. But after an interval of four years it was again opened. Concerning the method of moral and intellectual training introduced into this school, an account is given in the "Record of Mr. Alcott's School," by Miss E. P. Peabody, a third edition of which was published in Boston a few years since. We will say generally that the great idea of the school was the cultivation of the moral nature, while the intellectual was not neglected. The room in which the school was conducted was a large one, well ornamented, not by the upholsterer or joiner, however. There were busts of Socrates, Shakespeare, Milton, Scott, and Plato, with a fine representation

of Christ in basso-relievo fixed into a bookcase. The desks were not arranged after the "German method," so called, of having light strike the desk over the left shoulder of the pupil, but were placed against the wall. From the first the discipline was firm, yet mild. He insisted upon attention, and with but little opposition it was given him. In speaking of teaching spiritual truth, he says, "We have made it prosaic, literal, and worldly by neglecting the teaching of it by parables." "It was in pursuance of these ideas that Mr. Alcott took so much pains at first to bring out clearly in the children's consciousness a conception of the spiritual world, as alone having permanence and reality, notwithstanding its invisibleness." In his teaching he read much from the Bible, "Pilgrim's Progress," "The Fairy Queen," "Krummacher's Parables," "The Story without an End," and Miss Edgeworth's tales, dwelling upon them and thus exciting a continued interest in the subject.

Another prominent feature of the school was the mode of punishment; in brief, the culprit was the wielder of the birch, and not the one upon whom punishment was inflicted. It produced a "more complete silence, attention, and obedience than there had ever been." To putting this system into practice the scholars objected; they did not want to punish Mr. Alcott, and it actually brought tears to the eyes of some upon whom the duty devolved of inflicting blows upon Mr. Alcott. In thus escaping the momentary pain of the body they experience the much deeper pain of the mind in witnessing another suffer for their own violations of law.

The fatherly element thus brought into this school must have been of great advantage to the pupils, according to all that is said of its effect. Mr. Alcott continually, by conversations and readings, especially from the Bible, showed that his sole desire was not the mere intellectual gain of the individual, but that higher gain of the spirit, the benefits of which endure forever.

Later we find him in Concord, studying various questions of reform in education, diet, civil and social institutions, and living the life of a peripatetic philosopher, conversing on a wide range of subjects wherever invited.

Between 1839 and 1842 *The Dial*, that famous transcendental sheet, was published, and to this Mr. Alcott contributed several papers called "Orphic Sayings." In 1841 he visited England, and on his return, in 1842, in conjunction with Messrs. Charles Lane and H. G. Wright, founded the community of "Fruitland," in Harvard, Mass. These gentlemen, however, became dissatisfied and returned home to England, and the scheme was given up. Mr. Alcott then removed back to Boston and devoted himself to lecturing.

His books are not many in number, but rich in their freight; the list comprising "Tablets," "Concord Days," "Conversations with Children on the Gospels," and a later book entitled "Table Talk." In all we find charmingly-written papers on many subjects, and all laden with the wisdom of experience and deep thought.

Mr. Alcott, though nearly eighty years of age, is a tall, well-proportioned, sunny-featured old man, loved and esteemed by a very extensive circle. He held a monthly "conversation" or "symposium" at the parlors of the Rev. Joseph Cook, in Boston, during the past winter. At one of these meetings Mr. Alcott talked most of the time for the three hours it lasted, the subject being "The Concord Transcendentalists," telling, as he only can, much to interest the highly intellectual company present of that Society, which comprised Emerson, Hawthorne, Margaret Fuller, Thoreau, and himself. Of himself he then said, that he was educated on the "Pilgrim's Progress." He borrowed the book of a neighbor, and after keeping it six months, returned it and then borrowed it again. This he did every six months, until the book was given him. He had from the time he was ten or twelve always kept a note-book and had put everything into it—interviews with men, visits to friends, extracts, his own thoughts, whatever came to him. He had seventy volumes of these diaries, some of them being very voluminous.

Mr. Alcott is the father of Louisa May

Alcott, known to a very wide circle of readers by her "Hospital Sketches," "Little Women," "Old-Fashioned Girl," etc. It is her literary success that has placed him in comfort, as Mr. Alcott was never anxious to make money, but sought rather to introduce what he deemed better methods of living than are commonly followed by society. They are indeed better methods, but not sufficiently imbued with selfish sentiment to find a large following in this generation. He spends most of his time, according to the New York *Tribune*, "as a New-England Socrates, in asking and answering questions which are put to him in public and private circles. He is a wise man and has much dry wit for the seasoning of his speech. As many strange things are said of him as of Emerson or Thoreau, but with all his vagaries or transcendental theories, he has always combined such an amount of good sense and such a genial spirit that friends spring up in his path wherever he goes."

NOTHING TO DO!

Upon these acres, broad and wide,
Where God has set His husbandmen,
Where good and evil, side by side,
Spring up and bloom and seed again,

Do those exist who can not see
The labor fields outspread for them?
Who fold their hands contentedly,
Nor good approve, nor ill condemn?

I blush, indeed, that we should live,
We mortals, neither deaf nor blind,
Who fail, through indolence, to give
Some little lift to help mankind.

Nothing to do! The fields are white;
The harvest comes; the Reaper 's here.
The undergrowth, inducing blight,
We might have plucked in passing near.

Growth of our growth—imperfect all—
Deep-rooted; generations past
Let the dire seed of habit fall,
And it sprang up wherever cast.

Impervious to frost, the seed,
Impregnable to drouth as well,
It grows, outreaching with all speed
Its everlasting buds to swell.

Nothing to do! Alas! alas!
The work is great beyond our days;
Yet if we clutch the weeds we pass
We may a few uproot and raise.

Close, close at home the labor lies.
To imperfections men are born;
And wise is he who, patient, tries
To pluck first from himself the thorn.

Nothing to do! Press on! press on.
Do first what closest is to thee.
Let thy clean hands be ne'er withdrawn
From labor till God sets thee free.

S. L. OBERHOLTZER.

THE NEW THEORY OF IMMORTALITY.

A COMPARISON WITH PLATO'S VIEWS.

A VERY animated discussion has been in progress among English writers, principally contributors to the *Nineteenth Century*, concerning the new theory of immortality advanced as a possibility by Comte, and as a probability by Mr. Frederick Harrison. It seems to be Mr. Harrison's belief that our future life will be without consciousness, and will consist of the personal influences of our lives, works, or thoughts. Instead of conscious beings, we are to be working influences for the good of humanity. Mr. Harrison advances some strong arguments in favor of his theory. He notices the impossibility of demonstrating the conclusion that our consciousness as we know it can continue without a physical basis. It is an ingenious line of reasoning, but in estimating the future life as a mere working influence, we find a narrow and unsatisfactory conception of the soul's future condition. A certain valuable positive element is absent from all influence without personal presence. Take a controlling and active man away from his business, or a general like Napoleon from his army, and

you will find, generally, that the business will decay, or the army will suffer defeat. We therefore see that in every-day affairs personal presence greatly strengthens influence. It is true that the world is governed directly or indirectly by the thoughts of men now dead, but the present motion of events and the present power rests with the living. The mighty and quietly-working under-current of influence from those that are gone partakes not so much of personal power as of a Universal Power working with events. The genius should have great praise for seeing the right path and disclosing the real drift of the mighty current, but he would be too wise to assume that he was the current. It has been said that had Shakespeare known the tremendous results which were to follow his work he would have been unnerved by the awful responsibility and weight of every line. None of the great men could foresee the far-reaching effects of their work. It is greater than they are, because it is related to a great design of which they are only a part.

The real influence which each man can claim as his own is that which arises from his personal presence whether in action or not. Silence sometimes exerts more positive influence than speech. The direct effect of the written words of Plato, Shakespeare, Aristotle, and Goethe may be classified as equivalent to personal presence. But when we include the action of others as resulting from Plato's influence, a new factor has appeared in the problem, and a new influence for which this great writer and teacher is not directly responsible. This obliquely-working power is, after all, less than a living soul, and the almost universal dissatisfaction felt in regard to a future without consciousness is an expression of this intuitively recognized fact. We shall see further on, that an existence without consciousness is at variance with the irresistible reasoning of Aristotle. The want of harmony in the new theory becomes evident when we compare its dim outline of a future with the magnificent conceptions of harmony and unity by Plato.

One of the opposing arguments which Plato encountered is to-day represented in the views of Mr. George Henry Lewes—that all this inquiry in regard to the unknown is in a large degree a waste of talent and genius. Plato thus replied to a similar conclusion: "But that we shall be better and braver and less helpless if we think that we ought to inquire than we should have been if we indulged the idle fancy that there was no knowing and no use in searching after what we do not know." Mr. Lewes believes that philosophy has worked its mission by disclosing the limitation of thought. Plato evidently thinks that we should prefer action to inaction, but he by no means assumes that we can know everything. He repeatedly refers to two worlds—the visible and the invisible—and this is of necessity an admission of his ignorance of the invisible. His inferences are like rays of light projected into space; each one in exceeding the last is a demonstration of the possibilities of the one to follow. Notice his reasoning in regard to the greatness of the invisible. He treats of thought or reflection as invisible, to distinguish it from the mere perception of outward objects as animals perceive them. He places hate and fear and malice among the lower levels of the soul—almost with the visible or sense-perceptions. It is worth while to notice in passing that these severe or low qualities are more readily disclosed to the eyes of others than the qualities of mental symmetry or harmony which may result in no further distinguishing mark than an expression of cheerfulness. In the darkness of the invisible we are to look for soul-qualities, and not in the superficial combinations of the objective world. Plato thus indirectly points out the value of the intellectual principle:

"The soul, I mean, accustomed to hate and fear, and avoid the intellectual principle, which to the bodily eye is dark and invisible, and can be attained only by philosophy; do you suppose that such a soul as this will depart pure and unalloyed?"

The question of its condition at departure will depend on the value of its influence, according to the new theory, and not on the intrinsic value or intellectual harmony of its powers or qualities. But, as we have seen,

Plato terms harmony and equability the higher conditions of the soul. These high qualities are not necessarily sources of influence. They may exist in a person on a desert island or in conditions which effectually prevent all possible influence upon others. Plato maintains that harmony is the proper condition by thus pointing out the disturbed mental state resulting from joy or pain:

"Excessive pains and pleasures are justly to be regarded as the greatest diseases of the soul, for a man who is in great joy or in great pain, in his irrational eagerness to attain the one and avoid the other, is not truly able to see or to hear anything; but he is mad and is at the same time quite incapable of any participation in reason."

It might be added that the vast repose of nature is a symbol of the harmony of the invisible. Voltaire, with his keen logical conclusions from the surfaces of things, ignores the enormous possibilities of that which to him seemed mere blankness. When we think of the millions of incidents which are taking place at any one moment, and when we reflect that each star represents a possible solar system and other forms of being—when we think of all this as a vast sweep of events, existences, and worlds to us unseen, and all whirling on and on during certain quiet moments of our lives, we are then better prepared to realize the force of Plato's reasoning concerning the harmony and greatness of the invisible. In the following extract Emerson reproves our curiosity concerning this mystery: "An answer in words is delusive; it is really no answer to the questions you ask. Do not require a description of the countries toward which you sail. The description does not describe them to you, and to-morrow you arrive there and know them by inhabiting them."

The real object of discussions of this unfathomable subject is not to satisfy what Emerson calls low curiosity, but to make us realize by reasonings from the known to the unknown that a great future is not only a possibility, but a probability.

The principal defect in the new theory of the immortality of mere influence is that the elimination of consciousness would seem to result in a partial or mutilated condition of being. A mental existence without consciousness, or with only the power of working upon affairs through others, would involve a break in continuity, as estimated from our present restricted point of view. The demonstrated facts of science seem to indicate that in the material universe, as far as known, this law of continuity is never broken. We are justified in looking upon this endless stability as applicable to the subjective universe of mind. Our existence, as Aristotle has explained, is a motion—the very act of changing or the constant condition of *becoming*. We are results of the balanced forces of the life and death of particles. The motion of the material universe is not for its own object; it is fulfilling the object of an unseen thinker, or it is working out a result which is to us unknown. But the mind is the highest form of force, because it exists for itself. Emerson says: "My life is for itself and not for a spectacle." In addition to this independent quality it manifests positive power by faintly imitating the original creative action, as seen in poetry or descriptive literature, or in the imitation of nature in painting and sculpture.

The self-consciousness which Mr. Frederick Harrison has pronounced to be not essential to a future state is the element that completes the circle. The mind even looks upon itself as an invisible object to distinguish it from the visible objects of the outer world. It is, in a mechanical sense, an independent power. In mechanics a certain measurable amount of force is transferred from the object acting to the object acted upon. But the action of the mind may take place without producing the slightest direct effect upon another mind, and of course without effect upon any material object. It does not, like heat, become a mode of motion, nor completely lose its identity owing to chemical change, but as long as we are conscious of its action here, we find its identity maintained during a constant change of particles. Why should its identity disappear at death or become distorted by a sudden cessation of this power of looking upon itself as an object? As animals are apparently not self-conscious, this would seem to be a fall in the scale of being.

WILLIAM A. EDDY.

BRAIN AND MIND.

CHAPTER VI.—*Continued.*

LANGUAGE.

THE organ of this faculty is situated in the lower surface of the anterior lobe at the posterior part of the superorbitar plate.

"Let a line be imagined to extend for about an inch and a half from the root of the nose backward toward the center of the brain, and it will be found to reach a projection of bone rising from the base of the skull, called 'sella turcica,' from its likeness to a Turkish saddle. On each side of this body, and just where the optic nerves are about to enter the long orbit of the eye, there lies a convolution of the brain in man only (also in the higher apes slightly indicated), which runs from that point transversely in front of the middle lobe, till it reaches the convolutions which constitute the organs of Order and Number, and in its way it blends itself with the posterior portion of the convolutions of which the organs of the other perceptive faculties are composed."—BROWNE.

The phenomena of aphasia, an affection which deranges the faculty of speech, and investigations into the condition of the brain after the decease of the aphasic person, have convinced later anatomists of the existence of an organ in the brain which presides over speech. Dr. Austin Flint says: "It seems certain that in the great majority of persons the organ, or part presiding over the faculty of articulate language, is situated at or near the third frontal convolution, and the Island of Reil in the left anterior lobe of the cerebrum, and mainly in the parts nourished by the middle cerebral artery. In some few instances, the organ seems to be located in the corresponding part on the right side."

Its size is measured by the varying prominence or fullness of the eye, which results from the effect produced by the convolution which constitutes this organ upon the growth and form of the thin orbitar plate beneath it. This faculty takes cognizance of the artificial signs by which we represent ideas. Ideas are formed by the other faculties, and words are the signs by which they are represented. The word ox stands for a single object, and wherever the English language is spoken,

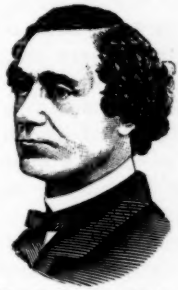


Fig. 46.—LANGUAGE LARGE.

conveys the same idea to the mind. In the phrase "red ox," two words or signs are used to convey two distinct ideas, and two mental faculties—Color and Individuality are employed to give us these ideas. In the sentence, "The big, heavy, red ox runs," five words are employed, five ideas are conveyed to the mind, and five mental faculties are concerned in comprehending these ideas. Language is the faculty which has to do with the manifest expression of these words or signs. It gives memory of words and facility in the

use of terms and phrases, and is thus the source of fluency of speech, and the ability to commit readily to memory. Where this organ is deficient the person finds great difficulty in giving expression to his thoughts. He may have ideas in abundance, but from want of the faculty which enables him to recall the words or signs by which these ideas may be represented, he will fail in the power of giving his thoughts expression.

Instances of disease of this organ in which the power of using words has been partially or wholly suspended (aphasia), are frequent in the records of pathology. We will instance but one or two:

The wife of a Presbyterian minister was seized with apoplexy, and upon recovery, it was found that her power of using words was impaired, while her other faculties remained entire. She frequently made very amusing blunders in her use of words. A clergyman came to the table one day in somewhat slovenly attire, and intending to ask him if he would have some soup, she inquired if he did not want "some clean linen."

Mr. Hood, of Kilmarnock, reports the interesting case of a man sixty-five years of age, possessing the ordinary knowledge of written and spoken language, who suddenly began to speak incoherently, and became quite unintelligible. "It was discovered that he had forgotten the name of every object in nature. His recollection of things seemed to be unimpaired, but the names by which men and things are known were entirely obliterated from his mind, or rather he had lost the faculty by which they are called up at the control of the will." He was quite well in every respect, with the exception of a slight uneasiness in the region of the eyes and eyebrows. If a familiar name were mentioned to him, he was able to repeat it once or twice distinctly, but generally before he could do so a third time, it was gone from him completely. He could understand passages which were read to him, but could not read himself. Between two and three years afterward he died of apoplexy. A *post-mortem* examination was made, and it was found that there was extensive disease in the left hemisphere of the brain over the orbitar plate.

The history of this organ is the most interesting of the faculties, as with its discovery by Dr. Gall began the series of investigations which resulted in the formulation of the Phrenological system. In the sketch of Dr. Gall's life, which is to be found in another part of this volume, allusion is made to the incident which drew his attention to the subject that has rendered him eminent among the world's benefactors.

Dr. Gall admits two organs or two divisions of the organ of Language, one termed the sense or memory of words, the other the talent for philology. Dr. Spurzheim admits but one organ embracing both modes of action. Mr. Combe and the later phrenologists have generally accepted Spurzheim's view.

THE REFLECTIVE OR REASONING FACULTIES.

COMPARISON.

The organ of Comparison is situated in the frontal convolution, at the inner margin of the hemispheres, on the middle line of the forehead, and directly above Eventuality. (See Fig. 17–37). It has for its function the perception of resemblances and differences. The other faculties compare objects of the same class as the ideas which they peculiarly and independently form; thus the organ of Color takes cognizance of the difference and resemblance of hues; Tune of

musical sounds; and Form of shapes. But this organ considers things which in their individual attributes are entirely unlike: as a light in a dark night, to a good deed in a wicked world. It frequently discovers unexpected resemblances among things, and is the source of the ability which some writers and speakers possess of illustrating their subjects by novel similes, metaphors, and analogies. "Its central position between the organ of the most benign of the moral and religious sentiments, and the most important of the perceptive organs is well adapted to the discharge of the functions it has to perform, since these appertain to each and

Fig. 47.—Comparison Large.

all of the faculties. For it recognizes resemblances not only in the attributes of incongruous physical objects, but also between things physical and things imbued with the characteristics of spirituality."

By the power which it gives of discovering differences and resemblances, it is a very important element in the critical and analytical mind. Chemistry, Botany, and all the sciences where nice distinctions and discriminations are necessary, are a natural field for its exercise. It gives to business men quick, practical judgment, by enabling them to compare any subject which comes up for their consideration with previous experiences. When this organ is small the judgment is slow; the person failing to comprehend readily the analogous conditions, is unfit for a place where prompt decision is required.

This organ was very large in the poet Moore, and his writings abound in comparisons. In his Life of Sheridan there are two thousand five hundred similes, besides metaphors and allegorical expressions.

Comparison is of great importance in a talent for public speaking. Many speakers, after a plain and simple statement of a given case has been made, find it difficult to dwell longer on the subject, even though Language may be

Fig. 48.—Comparison Small.

well developed, from want of interesting matter relating to it. Others again are able to enlarge upon the subject of which they are treating by the introduction of many topics which bear upon it, and so to present it in a clear and forcible light. Orators like Mr. Beecher, and reasoners like the late President Lincoln, have large Comparison, which contributes their readiness at illustrating their argument with anecdote and hypothesis drawn from every-day life.

Dr. Gall rightly observes that close reasoning and rigid induction are always disagreeable to a popular audience, because their faculties are not sufficiently cultivated or exercised to follow

abstract conceptions. The great charm of popular speakers, therefore, consists in perspicuity of statement and copiousness of illustration. So the most popular books of the day are those which abound with common incidents, analogies, and comparisons.

CAUSALITY.

All who have observed the contour of the forehead of men distinguished for profound reflection and theoretical reasoning talent, know that it is largely developed in the upper part. The

Fig. 49.—JOHN GARRETT.

portraits representing Socrates, Cicero, Bacon, Melancthon, and Kant, are thus marked, and Dr. Gall was led by his study of such characters to the determination of the organ which he ascribed to "metaphysical depth of thought;" "aptitude for drawing conclusions," and which Dr. Spurzheim named Causality.

The organ is situated on each side of Comparison, and above Locality. When large, it gives prominence to the upper portion of the forehead, the region of the *frontal eminences* of the cranium, and if the Perceptives are small, that part has an overhanging appearance. If, however, the Perceptives are developed in proportion to the Reflective faculties, the forehead recedes a little from the perpendicular. It is the office of this faculty to take cognizance of the relations among phenomena which constitute cause and effect. The Perceptive faculties recognize the existence and qualities of objects. Eventuality notes the changes which they present, and Causality seeks to trace these phenomena back to their origin or to the causes which produced them. Thus the Perceptives take cognizance of the existence of day and night, and the various phenomena presented by the changing seasons. Causality goes back of the phenomena, and inquires into their source. The moon is observed to increase in size from night to night, then to wane, disappear for a season, and again appear to pass through the same phases. Causality stimulates inquiry into the nature and law of these changes, and so contributes to the profoundest human wisdom. Sir Isaac Newton was helped toward the discovery of the law of gravitation by the fall of an apple. Millions before Newton had seen apples fall without giving the phenomenon even a passing thought. But Newton's large Causality led him to inquire why apples when released from the stem fall in a direct line to the ground instead of flying upward or in any other direction, and the result of his reflection on this simple every-day incident was the discovery of the law by which day and night, spring, summer, autumn, and winter follow one another in unalterable succession, and the countless worlds in the starry heavens revolve in harmony.

Dr. Spurzheim observes that "the

faculty of Individuality makes us acquainted with objects; that of Eventuality with events; Comparison points out their identity, analogy, or difference, and finds out their harmony; finally, Causality desires to know the causes of all occurrences. Consequently, these faculties together, pointing out general principles and laws, and drawing conclusions, inductions, or corollaries, constitute the truly philosophic understanding." In another place he says: "It is remarkable that the ancient artists should always have given to their busts of philosophers a large forehead, and represented Jupiter Capitolinus with a forehead in the middle part more prominent than is ever seen in nature (except in very rare instances). They seem to have observed that development of the forehead has a relation to great understanding."

If this faculty be very deficient the intellect will be superficial, and incapable of forming a comprehensive judgment or of taking wide-reaching views. It may be capable of dealing successfully with the common affairs of life, performing work laid out, or devised by deeper intellects, but if intrusted with duties involving a clear perception of causation and result, it will fail.

In man alone this faculty is capable of universal application, and its possession gives him an immense superiority over the brutes. Causality prompts man to ask the question Why? and its office of tracing effects to causes appears to include a measure of prevision, or of foreseeing effects which certain actions are destined to produce. Many persons largely endowed with the reasoning faculties, and hence capable of looking deeply beneath the surface of things and deducing remote causes and assigning what appear to most people novel relations to events, obtain the reputation of being "original," whereas true originality belongs to the function of another organ, and can not strictly be imputed to reasoning merely. Fancy and invention may contribute toward new methods of reasoning, but true originality proceeds from a sentiment, Spirituality.

CHAPTER VII.

THE SEMI-INTELLECTUAL FACULTIES.

CONSTRUCTIVENESS.

THE place of this organ is in front of Acquisitiveness and contiguous to that part of the frontal bone which is immediately above the spheno-temporal suture. (See Fig. 17-20.) When large, it gives breadth to the head above the zygomatic arch. "If the base of the brain is narrow," says Mr. Combe, "this organ holds a situation a little higher than usual, and there will then frequently be found a slight depression at the external angle of the eye between the zygomatic process and the organ in question, especially when the muscles are thin. In such cases it has sometimes appeared as high up as Time generally occurs. This slight variation from uniformity of situation, occurs in the distribution of all parts of the body; but the anatomist is not on this account embarrassed in his operations; for the aberration never exceeds certain limits, and he acquires by experience the tact of recognizing the part by its general appearance." It may be added here that the growth of organs in their groupings is toward those which exercise a dominating influence, so that when Constructiveness, for instance, appears high up in the brain and forward, it is more closely associated with the reasoning intellect than with the perceptive.

It is the function of this organ to manifest a disposition to fashion, to configurate, and to put together materials in forms of utility or beauty. It gives manual dexterity in the use of tools, and is essential to all arts which involve mechanical construction and configuration. It enables man to build houses for his shelter; to fabricate clothing for his protection and comfort; to construct ships, machinery, and the implements essential to his advancement as a rational and progressive being.

Some have supposed that the disposition to construct is dependent upon the general intellect, or habit, or a matter of acquisition, but this opinion is obviously not correct, since many persons eminent for intelligence have never shown any capability in mechanics, while others have manifested constructive ability in a remarkable degree, who were lacking greatly in intellect. This faculty also is frequently manifested by children at a very early age, while as yet the general intellect is undeveloped. Moreover, we find it exhibited in the lower animals in a way that evidently bears no relation to the degree of their intelligence. The elephant, the horse, and the dog rarely make the slightest attempt at construction, while the bird, the bee, and the beaver are remarkable for their manifestation of mechanical skill.

Fig. 50.—Large Constructiveness.

In illustration of the activity of this faculty at an age which precludes the idea of its being dependent upon the general intellect, Dr. Gall relates that Vulcanson, when a mere child, from simply seeing a clock through a window, constructed one like it with no other implement than a common knife. A gentleman with whom Dr. Gall was intimately acquainted, made, at a very early age, a machine for making pot-barley, and actually set it in operation by a small jet from the main stream of the water of Leith. Le Brun drew designs with chalk at three years of age, and at twelve he made a portrait of his grandfather. Canova, in chilhood, was led to model figures without knowing the methods or materials which are used in such sculpture. Sir Christopher Wren, at thirteen, constructed an ingenious machine for representing the course of the planets. Michael Angelo, at sixteen, executed works which obtained high consideration.

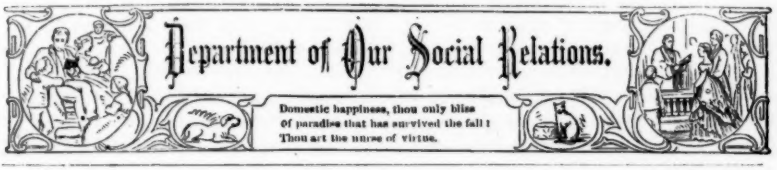
Mr. Combe speaks of an eminent Scotch barrister, in whom Constructiveness was largely developed, who, in the very act of composing a written pleading on the most abstruse question of law, would have vivid conceptions of particular pieces of mechanism, or of new applications of some mechanical principle, dart into his mind, and wholly interrupt the current of his thoughts, till he was obliged to embody them in a diagram or description, that he might "lay the Devil," as he termed it, and proceed with the subject in hand. Louis XVI. of France had a

private workshop in which he employed much of the time which should have been given to affairs of State in devising locks and setting type.

Dr. Gall mentions that two of his friends, the one an excellent teacher, and the other a "grand minister," were passionately fond of gardening, but he never could teach them to ingraft a tree. And Montaigne says of himself, "I can not handsomely fold up a letter, nor could ever make a pen, nor carve at table worth a pin, nor saddle a horse." We know persons of eminence in the law and some departments of science who have no taste or knack for using tools.

Dr. Rush says that there is no insane hospital in which examples may not be found of individuals who never showed the least trace of mechanical talent previously to their loss of understanding; but who have subsequently constructed the most curious machines. These unwonted manifestations of ingenuity are due to the excitement produced in the organ of Constructiveness by mental derangement.

A large endowment of this faculty is essential to the engineer and surgeon, to the dress-maker and milliner; and all women who take pleasure in cutting and fitting their own dresses, and devising changes in the arrangement of house or garden, have the lower and forward part of the side-head well filled out.


Department of Our Social Relations.
Domestic happiness, thou only bliss
Of paradise that has survived the fall!
Thou art the nurse of virtue.

THE FELLAHEEN OF THE NILE.

THE term *fellah* has come to signify all the poorer class of Arabs, whether in city or country, but the real meaning of the word is "tiller of the ground;" and while it is given to those poorer people living in towns who understand nothing of farming, it is also bestowed on all interested in agriculture, whether he be owner or laborer.

Fellaheen is the plural for fellah, and fellaha the feminine. There is but little difference between the rich and poor. The rich fellah may have a larger house than his poorer neighbor; still it is made of mud, and is no cleaner or better. The wealthy fellah buys gold ornaments for his wife, while the poorer fellaha adorns herself in brass or silver. The abode of the rich may have an additional apartment, and the lady of the house sometimes deck herself gorgeously in an embroidered vest at the great festivals, but their wretched abode is dirty and disorderly, swarming with vermin, suffocating in the hot season, and piled with dust and rubbish continually. There is, generally, only one room in the hut of the poorer fellah; the door is so small and low that the owner of the mansion must needs bow his head to enter; and there are no windows, so that it is not at all surprising that the inmates prefer the outside to the miserable interior, often sleeping without and sitting all day in the sunshine.

Why they should persist in building these huts on such a diminutive plan is beyond comprehension, for there seems to be plenty of room and no apparent reason for such close quarters; and still another wonder is, their utter disregard of all rules of cleanliness. The climate is such that greater care and labor are required to promote neatness

and remove dust than in northern countries. Fancy, then, what state a small, windowless room can reach where the whole family is crowded within the crumbling walls built of sun-dried mud, and no attempt is made to remove fleas, dust, and rubbish of every description.

It is amazing how the little fellah baby grows out of all the filth and reaches a strong, vigorous manhood. Probably those infants only live who possess naturally a strong constitution, able to fight its way through its wretched surroundings into light and air, for many children die under two years of age, owing to their miserable condition and the ignorance and neglect of their childish mothers. Those in the towns are in just as bad a condition, if not worse, occupying mud houses, two or more families congregating together in one small house having but one door, or in some ruined building nearly fallen to pieces, yet interesting to the traveler because of its remnants of exquisite carving and elaborate latticework, made in some long-since departed day of Egyptian glory; while under the dust and dirt that lies piled around, may be seen fragments of a mosaic floor, or gleaming of broken marble. An Arab never repairs anything which fate has stamped with decay; for example, visit the beautiful old Moorish mosque in Cairo, where the birds are building their nests in the quaint archways, and fluttering undisturbed amid the delicate, but broken, carvings of a vanished age.

What do these women, these fellaheen, find to occupy their time—how do they pass the long, sunny hours on the banks of the Nile? They are generally awake early in the morning, and astir as soon as daylight begins to appear, notwithstanding their natural laziness. As the fellaha wears the same clothing in the daytime which she does at night, it takes a very brief period for her to arrange her toilette. Sometimes she makes a ridiculous attempt at sweeping; takes a bunch of twigs, and squatting amid the dirt, feebly essays a clearance. After awhile the family assemble to partake of breakfast, sitting on the floor around the dish which contains boiled beans and oil, or a kind of stew. After this is over, the fellah goes to his work in the fields, and his wife not having any household duties to perform, such as washing dishes, making beds, etc., visits her neighbors, and a great amount of gossip and chatter ensue. If there is such an unlucky individual as a baby in this promising family, it is often rolled in a bundle of rags and laid down to sleep on a pile of mud, and there left to its slumbers, and the flies which swarm around it in delighted numbers.

The only time when the fellaha is really busy, occurs on the days of bread-making. Then all is bustle and confusion, picking and cleaning the corn, going to the mill, sifting the flour, mixing and kneading the dough, and baking the small flat loaves in the mud oven. Another duty is going to the river for water. Clad in a dark blue mantle, the national garb for centuries, they lift their jars to their heads and go down to the river's brink to fill them. From every village on the Nile, there is a path leading directly to the water's edge, and this is traversed morning and evening, but more especially in the evening, by long files of women. The *ballas* jar, as it is called, is washed in the stream and then filled; a hollow pad is worn upon the head on which the jar rests, and so having helped each other to lift the heavy weight to its place, they wend their way homeward, gracefully walking up the steep incline without even touching the jar with their hands, chatting and laughing meanwhile with their companions, and apparently never giving a thought to their burdens. The evening comes and the family is united at the principal meal of the day. A large amount of bread is broken into a huge bowl, boiling water is poured on this, and a handful of lentils scattered in, and the whole is then stirred with a wooden spoon. They all sit in a circle, each holding an onion or bunch of lettuce in the left hand, while with the right they dip their fingers in the bowl, alternately taking a mouthful of porridge and a bite of the onion or lettuce. This is believed to be the same kind of food as that for which Esau sold his birthright, centuries ago; the same as that which fed

the pyramid builders described by Herodotus, and is the invariable meal of the fellaheen, varied only with beans and lupins.

They are kind-hearted and generous with their food, and if any person pass by, they always call him to join in the repast. Even the smallest children possess this unselfish trait, and always share any object of food given them with their companions. No Arab ever dies of starvation in Egypt; food is shared with those who have none, and if a "brother" have need, they aid him in every way that is in their power. There is no occasion for orphan asylums among them, for if a child's parents die, somebody — generally a childless woman — always comes forward and takes the child to herself, treating it in every way as if it were her own.

The fellah performs his devotions before eating, but the women never pray; they think it would be useless, and so, night after night they creep into their huts like the snail into its shell, and, wrapped in some thin mattress, they fall asleep, ignorant of life's duties, and totally forgetful of the Divine power.

In the darkness of the Egyptian night we glide away from the Nile shores and leave them in their comfortless mud huts, while the palms wave far overhead and the river plashes its waves against the clover-scented banks, while the pigeons coo and fly over the brown mud villages, and hang in vast numbers on the awkward towers built for them, and far and near the sakias sigh to each other along the shore.

SARA KEABLES HUNT.

SLIPSHOD WAYS.

MARK and Jane were to be married in a week. Dropping into the Taylor sitting-room one evening, Mark found Aunt Mary assisting Jane about some of her elaborate and mysterious bridal preparations. Aunt Mary was always considerate and sympathetic in her words and ways, and Mark liked her. He sat down by her now in unwonted silence, and with a clouded brow.

Jane looked at him furtively from behind the clouds of white lace and muslin in her lap, as he mechanically poked over the multitudinous trifles in her dainty work-basket, making as vague and unsatisfactory answers to her numerous questions as if he were guessing conundrums. After ten minutes had been spent in this rather stupid way, Aunt Mary asked, suddenly:

"Well, Mark, what is it?"

The young man started and looked up at her with a smile, as bright as if a heavy fog had been lifted off his mental horizon, as he said:

"I declare, Aunt Mary, I didn't mean to speak of it, but I am as nervous as a girl over—over—next Thursday; not the ceremony itself, mind you; I shall really enjoy the display in the church—but I refer to all the life that is to follow."

"Marriage is indeed the most important event of a life-time, and the outlook to every reflective mind must be a serious one," said the sweet-faced old lady; "but may I ask what has brought up the subject so impressively before you to-night?"

"The fact is, Aunt Mary," replied Mark, hesitatingly, "I have just come from Cousin Henry's. As I was passing the gate on my way here I heard the woodshed door open, and Susan's voice call out: 'Supper's ready.' The pleasing vision of a neat dining-room, a cosy tea-table, and two happy, contented young souls enjoying the nicely-cooked, tastefully-served evening meal rose up before me, and I could not resist the impulse to turn back and take a look at them. I ran in unceremoniously, as is my wont, announcing myself, as I opened the sitting-room door, by a hearty 'Good-evening.' There was no fire in the room, but plenty of dust and disorder.

"'Come right in here,' shouted out Henry, and I followed his voice through the dining-room, unwarmed except by the far-away warmth of the kitchen fire. A large basket of rough, unfolded, and unironed clothes was turned bottom upwards on the extension-table, an immense clothes-horse filled

half the room, and every chair was loaded with coats, hats, cloaks, and shawls.

"'We just use the dining-room as a sort of "gangway" in the winter,' said Henry, 'and den up here, except when we have company. If anybody runs in upon us they must take us as they find us.' This was not an over-cordial welcome, but I went along into the kitchen where Henry was seating himself at the tea-table, which, if you will believe me, Aunt Mary, was their little hanging cooking-table covered over with a strip of oilcloth. A few odd pieces of crockery were scattered upon it without regard to order.

"The little bit of a kitchen was untidy, the stove dirty and rusty. There were memories of Saturday's baking in the shape and appearance of flour, dough, and grease on the floor, table, and door-latches, and a salt codfish, with a cotton string tied around its tail, was hanging to the knob of the closet door. Susan's hair was rough and frowsy, and her gown was torn and soiled. Dear me, who could have imagined that such a state of things was so soon to follow their great and expensive wedding! What a picture of loveliness the bride was! They might as well hire two or three rooms in a flat to 'den up' in as to own that large, elegantly-furnished house and not use it, or to so misuse it.

"This scene rather discouraged me. Were Jane and I to deteriorate in that way I think I would rather have everything stop just where it is. I believe it would save us a world of trouble, and we would go on looking at married life, as we would have made it, through rose-colored glasses;" and Mark moved uneasily, got up nervously, and going around the table, seated himself by Jane's side and tenderly kissed the pretty, reproachful face she raised toward him, while Aunt Mary was considerately looking another way.

"Perhaps Henry is not altogether blameless in the premises," said Aunt Mary, coming back to the table with a red face after an energetic hunt for the shears; "did he fix himself up for tea?"

"Oh, dear, no," replied Mark, "he sat down and ate his bread and milk in his shirt-sleeves, collarless and cravatless, and with unbrushed hair and whiskers. He would not have shown himself to Susan in such a plight before his marriage, I assure you."

Aunt Mary looked at the pretty Susie's clock on the mantel, took out her gold pencil, wrote a little note, and then said to the young man: "I wish, Mark, dear, you would carry this *billet* over to my nephew, Horace Alden's, for me. They live in the east tenement in the Rutherford Block, you know, and on the strength of your cousinship that is to be, I want you to run in without ceremony."

Mark came back in an hour with a radiant face. Removing his hat, he made Aunt Mary a low bow, saying: "I am very much obliged to you; I wouldn't surrender the opportunity that may be graciously given me of helping make a *home* with Jane here for any earthly consideration."

"Indeed," cried Aunt Mary in seeming surprise, "perhaps you will be good enough to tell us what has changed your mind so suddenly."

"Well, you see," said Mark, "I ran up the stairs and opened the door at the top, as you told me, and such a charming picture that I saw. A living-room, neither parlor, dining-room, nor kitchen, but a happy combination of the three, made attractive and homelike by perfect neatness, order, and good taste. Such a cordial welcome that I had, to be sure. I was heartily ashamed when it came over me how well I used to know both Horace and his charming wife, and that I had not called on them before.

"I gave Julia your note, and she read it with a little laugh, and insisted that I should take off my overcoat and take tea with them. The cosy round-table, with its snow-white cloth and pretty tea-service, looked so inviting I could not resist the temptation. 'Horace does not get out of the store till seven; he sees to the closing up, so we have our tea at half-past seven,' Mrs. Alden said. Julia's dress was plain, but tasty and neat, set off by a dainty white apron, and her simple toilet was completed by a geranium leaf and a verbena blossom in her

shining hair. Horace, in a handsome dressing-gown and embroidered slippers, looked every inch a gentleman, as he is.

"The situation made us confidential, and I asked Mrs. Alden how she had managed to settle down into being such a wonderful little housekeeper, and she said: 'I used to be somewhat inclined to be careless in my habits, and I suppose my friends had some misgivings as to my ability to keep house. Among my wedding presents was one from a great aunt of mine who was wonderfully skillful with her needle. It was this tea-pot mat,' and she held it up for my inspection. It was a scalloped circle of scarlet broadcloth, with a slipper run down at the heel embroidered in it in black worsted, with the words, '*Never get slipshod.*'

"'This has been a constant reminder to me,' Julia went on. 'Were I tempted to neglect any trifling duty for the first time, my eye would fall upon or recall the words of Aunt Mittie's motto, and I would not only do what I had thought of neglecting, but would do it a little better, if possible. Horace, too, has kept me from falling into slipshod ways by his own habits of neatness. He always touches up his toilet for my sake before every meal, as punctiliously as if we had company.

"'Of course, when he is so thoughtful of me I can not be less regardful of him. All these little things take a few of the precious moments of our fleeting lives, but we consider their observance our bounden and interchangeable duty. Since housekeeping is the principal business I have in hand, I want to do my best in that vocation; to be as conscientious and painstaking in that as I would in teaching music or any other accomplishment. I enjoy my work; it comes easy to me. I take both pleasure and pride in it, and I think the secret of my success in this humble sphere of mine has been my keeping everything up from the very first, and never allowing myself in the smallest particular to fall into slipshod ways.'"

Mark and Jane, now settled in their beautiful, well-ordered, Christian home on the banks of the Connecticut, only the other evening spoke of the two lessons that December evening brought them, and the lasting impressions they wrought.

MRS. ANNIE A. PRESTON.

SUNDAY AFTERNOON.

This soft sun glory filtering thro' heaven's blue—
Like love-light thro' th' azure of your eyes—
Melts and subdues my heart to tender sighs
For that sweet season, fresh with morning dew—
Life's flowery, fragrant June,
Breaking to bloom on Sunday Afternoon.

Let me remind you—with this lover's kiss—
Coming from church on such a golden day,
Love's radiant rainbow arching the charmed way,
Our hearts a-tremble with unspoken bliss—
Ah, all too soon—too soon
Fled that bewildering Sunday Afternoon!

Do you remember, sweetheart—that blush tells—
Coming from church upon a day more fair,
With orange blossoms nestling in your hair,
And all the air athrill with marriage bells?—
A blessed, blessed boon
Was life to us that Sunday Afternoon!

And blessed hath it been thro' all the years
That we have walked together, heart to heart,
Bearing of every burden, each our part,
Sharing our pleasures, mingling our tears,
And finding our way strewn
With heart's-ease, always, Sunday Afternoon.

For this oasis in the desert sands,
This peaceful stop between the week's stern wars,
This tender strain 'mid life's discordant jars
Strengthens our hearts, and nerves our failing hands.
Our souls are set atune
To heavenly music Sunday Afternoon.

Here present, past, and future strangely blend,
And life illumined by th' Eternal light
Unfolds its mysteries to our groping sight—
More clear appears our being's aim and end
When, rising soft, the moon
Closes with prayer our Sunday Afternoon.

ANNIE L. MUZZEY.

THE DUTY OF LIFE.

THE publication of the sketch of Mrs. M. S. Wetmore in the June number of the PHRENOLOGICAL, led that lady to write the following letter to the editor. It will be seen by the reader how much it exemplifies the main features of the estimate of her character which was briefly predicated of the portrait supplied us by a friend. After a few preliminary remarks, Mrs. Wetmore says:

"If I possess traits which cause me at all times, and in all places, to see and feel the great need of a development of the finest and best nature of man, and to realize keenly, as I do, that man's thought, or want of thought, and action tend to develop only the grosser elements thereof, I can only work in season and out of season, even while I know that this grand old world would move on all the same, if I did not feel impelled to do the work that so few consider a needed one. I realize keenly that if I would do all I desire, I must economize my strength, and rest more than I do; but sometimes, aye oftentimes, when my soul is fired with a strong sense of the fearful condition of humanity, thought *will not* cease, and rest will come only in action. Oh, there is such need for greater *thought* in the community; such need of a grander Christianity, in the form of *love for humanity*, that I often feel if my poor life, given as a sacrifice, could effect even a slight change, gladly would I give it. But, life must be given in a grander and nobler manner than by simply ceasing to live in the form. It is the duty of every individual to strive to understand how his or her life may be of greatest service, not to self simply, but to the greatest number. At present we are, as a people, a result of ignorance, and until such ignorance becomes intelligence, we must suffer as we do. It is my greatest desire to be able to teach my brothers and sisters all around me, how they may become what it is said they were created, viz., beings a little lower than the angels. Inharmony reigns everywhere, but as the skillful teacher tunes the instrument that sends forth such discordant sounds, so shall the determined, unselfish souls who seek a grander life for earth's children, attune to harmony the living instruments in which are wonderful and numberless notes, that under skillful treatment will give forth music grander and sweeter than ever yet has charmed mortal ears. We want new evangels—and they must be such as labor from purest love—to go forth in the name of humanity, to teach mothers and fathers what they surely do not know, or they would commence in earnest the work of elevation for themselves and their children. What are the fathers and mothers of to-day? And what are the children to become? We may not decide what they *will become*, but it is patent that they will *not* be what we ought to look for at this day and in this generation. Surely they who clearly see the cause of all the difficulties, who realize that an inborn selfishness is eating the very life out of humanity in a thousand varied ways, ought to go forth with two-edged swords and with healing power in their hands and rest not until they have unsealed the eyes of the weak, the blind, and the thoughtless. That a better state of affairs will some day exist, I do not doubt, but I can not sit with folded hands and rest in such belief. The good gardener places his choice bulbs and seeds in suitable conditions for their development into all that it is possible for them to become. If the same kind care and attention could be exercised over the grander bulbs in human life, what glorious results might be achieved! Beautiful seeds, or seeds that would develop and yield lovely flowers under better conditions, are sown among thick and rank weeds, and the beautiful love-light of their blossoms choked out, and their otherwise sweet odor rendered a stench in the nostrils of humanity.

"Day by day the same process goes on, and day by day the record reads, murder, theft, arson, rape, and all the many remaining forms of crime contained in the catalogue. Prayers are offered up daily, but are unavailing, because the kind of prayer needed to-day is such as must be sent forth in earnest work, and in truthful words, so plain, a child may understand, and yet they must be sharp and incisive, cutting their

way to the very soul of things, and blasting by their *truthfulness* the errors and superstitions of the day. Let every person commence the work of *thinking*, and soon a new state of affairs would be inaugurated. Let us think, afterward let us pray; then, let us *do*.

"I have never realized that any work of mine was anything beyond what every one ought to perform, consequently it has not seemed much to me, even though I allow it to be *the* work of life, and so I have kept no reckoning in regard to it, hardly giving it thought only as it might serve upon occasions to rouse some listless beings into quicker life, by showing them what *they* could do, and how they could put their own sorrows out of sight by helping others to bear their burdens, and at the same time lightening the burdens of both the helper and the helped. I think that if I have talents I ought to be ashamed if I make no use of them; and grateful that I can be of service to my kind. I ask nothing but strength equal to the needs of the day; with that, I am sure I shall do something, that I need not feel I am no better for having lived, or the world made just a little better for my stay in it. We want *men* and *women*, true as steel to the best and highest intuitions and aspirations of their souls. We want only this, then everything good, noble, and magnificent can be outwrought. God speed the day when woman shall awaken to the knowledge of her power! Then, man will unfold his grandest proportions, and the twain, as one, become a power for good in the land, showing by the peaceful quiet of their lives and by the fruits thereof that only in true oneness can completeness be expected. Then will divorces cease. Then Free Love will be understood as that which unites two as one for time and eternity.

"Yours sincerely,

"M. S. WETMORE."

WILLIAM CULLEN BRYANT.

ONE of the most impressive occurrences of the year is the recent death of Mr. Bryant. Although an old man, his presence among us had the nature of a revered public institution, a social and literary necessity. We had grown to look to him for counsel and suggestion when events of uncommon interest aroused general attention, and his long career as an author and journalist had given him an indisputable warrant to our confidence and esteem. Aside from the consideration always accorded him by his fellow-citizens of New York, he had won the respect of the civilized world through his poems and scholarship. Wherever the English language is understood, the author of Thanatopsis is known. Literature was his natural sphere, and when a youth he

gravitated toward it by the spontaneous impulse of his special mental endowments.

His death occurred on the 12th of June last, and it seems to us that his life should have been prolonged several years, for until a few days previously he had exhibited the indications of vigorous health both in body and mind, and we can not help thinking that it was an indiscreet undertaking on the part of so old a man to make a special oratorical effort in the open air as he did at the unveiling of the Mazzini bust in Central Park, on May 29th. There he stood in the presence of a large assembly, his uncovered head exposed to the glare and heat of the sun. His subsequent fall upon the stone steps at the entrance of General Wilson's house completed the injury done to his sensitive brain, and sent him to the couch from which he never rose again. It was a noble service which Mr. Bryant performed in celebrating the memory of the great Italian patriot, but it was performed at too great a risk, and New York is now deploring the consequences.

The poet was born November 3, 1794, in Cummington, Mass. He was carefully trained by his father, a physician of some eminence, and finished his education at Williams College. His poetic talent showed itself at a very early age, as before he was fifteen he had written several remarkable pieces of verse. He had adopted the law as his calling, but after ten years' practice he took up the pen of the journalist, becoming in 1827 the editor of the New York *Evening Post*, with which his name and personal interest have ever since been identified. His health and vigor were marked throughout his life, and were due not so much to an original endowment of physical toughness and endurance as to his simplicity and regularity in every-day habit. His temperaments were nearly balanced, the mental predominating. His head was full in the intellectual region, but somewhat narrow in the lower lateral portion bordering the ears, while in the upper and forward parts of the side-head it was strongly developed. His Ideality was large, but dependent upon his intellectual perception, as is seen in his poetry, which rests in the objects of nature, deriving its similes from tree, flower, bird, insect, etc., and ever picturing some phase of truth and utility. The upper part of Mr. Bryant's forehead, as shown in the cast taken from his head when he was about forty, is relatively narrow, particularly in the region of Mirthfulness, and in confirmation of the mental quality indicated by this phrenological characteristic it is said that he had no appreciation of the humorous; could not see why people admired or enjoyed Dickens. Yet he was a fine critic, sharp and incisive in defending his opinions or in refuting the sophistry of an opponent. The center of his forehead was conspicuously prominent; he had a fine memory, and prided himself on correct scholarship.

During the past ten years Mr. Bryant gave most of his time to leisurely studious pursuits, bringing out in the course of time his admirable translation of Homer, and responding to numerous invitations to speak on occasions of literary, educational, and political importance.

His diet consisted largely of fruit, baked apples in particular, and the different farinacea. For some years past the staples of his breakfast were oatmeal, milk, and fruit. He loved to retire early, and was a very early riser. It is said that for many years he had the habit of walking down to his office, winter and summer, by or before seven o'clock, and there reading the morning journals while munching a piece of dry bread, with a glass of water as his beverage. He was an extremely active man, fond of gymnastic exercises, and a great walker. After he was past forty he walked in one day, for his pleasure, from Haverstraw to New York, along the left bank of the Hudson, a distance of over forty miles. When he was sixty-five a ten-mile walk was a pleasure to him, and even in the last year of his life he walked down to the *Evening Post* building, and then, if the elevator were not waiting, would often ascend to the editorial rooms in the ninth story by the long flights of stairs.

The following letter, written by Mr. Bryant some years ago, describes with much fullness the routine of his life from day to day, and is very interesting in a hygienic sense:

NEW YORK, *March* 30, 1871.

TO JOSEPH H. RICHARDS, ESQ.:

MY DEAR SIR:—I promised some time since to give you some account of my habits of life, so far at least as regards diet, exercise, and occupations. I am not sure that it will be of any use to you, although the system which I have for many years observed seems to answer my purpose very well. I have reached a pretty advanced period of life without the usual infirmities of old age, and with my strength, activity, and bodily faculties generally in pretty good preservation. How far this may be the effect of my way of life adopted long ago and steadily adhered to, is perhaps uncertain.

I rise early, at this time of the year about half-past five; in summer, half an hour or even an hour earlier. Immediately, with very little incumbrance of clothing, I begin a series of exercises, for the most part designed to expand the chest, and at the same time call into action all the muscles and articulations of the body. These are performed with dumb-bells, the very lightest, covered with flannel, with a pole, a horizontal bar, and a light chair swung around my head. After a full hour, and sometimes more, passed in this manner, I bathe from head to foot. When at my place in the country I sometimes shorten my exercises in the chamber, and, going out, occupy myself for half an hour or more in some work which requires brisk exercise. After my bath, if breakfast be not ready, I sit down to my studies till I am called.

My breakfast is a simple one—hominy and milk, or in place of hominy, brown bread or oatmeal or wheaten grits, and, in the season, baked sweet apples. Buckwheat cakes I do not decline, nor any other article of vegetable food, but animal food I never take at breakfast. Tea and coffee I never touch at any time. Sometimes I take a cup of chocolate, which has no narcotic effect and agrees with me very well. At breakfast I often take fruit, either in its natural state or freshly stewed.

After breakfast I occupy myself for a while with my studies, and then, when in town, I walk down to the office of the *Evening Post*, nearly three miles distant, and, after about three hours, return, always walking, whatever be the weather or the state of the streets. In the country, I am engaged in my literary tasks till a feeling of weariness drives me out into the open air, and I go upon my farm or into the garden and prune the fruit trees or perform some other work about them which they need, and then go back to my books. I do not often drive out, preferring to walk.

In the country I dine early, and it is only at that meal that I take either meat or fish, and of these but a moderate quantity, making my dinner mostly of vegetables. At the meal which is called tea I take only a little bread and butter, with fruit if it be on the table. In town, where I dine later, I make but two meals a day. Fruit makes a considerable part of my diet, and I eat it at almost any hour of the day without inconvenience. My drink is water, yet I sometimes, though rarely, take a glass of wine. I am a natural temperance man, finding myself rather confused than exhilarated by wine. I never meddle with tobacco except to quarrel with its use.

That I may rise early, I, of course, go to bed early; in town, as early as ten; in the country, somewhat earlier.

For many years I have avoided in the evening every kind of literary occupation which tasks the faculties, such as composition—even to the writing of letters, for the reason that it excites the nervous system and prevents sound sleep. My brother told me not long since that he had seen in a Chicago newspaper and several other Western journals a paragraph in which it was said that I am in the habit of taking quinine as a stimulant, that I have depended upon the excitement it produces in writing my verses, and that in consequence of using it in that way I had become as deaf as a post. As to my deafness you know that to be false, and the rest of the story is equally so. I abominate all drugs and narcotics, and have always carefully avoided everything which spurs nature to exertions which it would not otherwise make. Even with my food I do not take the usual condiments, such as pepper and the like. I am, sir, truly yours, W. C. BRYANT.

He was to the time of his accident a fresh, active, spirited man, an example of what habits of purity, regularity, and hygienic intelligence will do for a man, and for upward of fifty years he had exercised an influence in the world of letters, politics, and society, at once refining and ameliorative.

To the reader a brief extract at least from his Mazzini address will be acceptable, as that was Mr. Bryant's last public effort, and so intimately related to his decease. In it one remarks a vigor and freshness rare, indeed, in one past eighty:

"The idea of Italian unity and liberty was the passion of Mazzini's life; it took possession of him in youth, it grew stronger as the years went on, and lost none of its power over him in his age. Nor is it at all surprising that it should have taken a strong

hold on his youthful imagination. I recollect very well that, when forty-four years ago, I first entered Italy, then held down under the weight of a score of despotisms, the same idea forcibly suggested itself to my mind as I looked southward from the slopes of the mountain country. There lay a great sisterhood of provinces requiring only a confederate republican government to raise them to the rank of a great power presenting to the world a single majestic front, and parceling out the powers of local legislation and government among the different neighborhoods in such a manner as to educate the whole population in a knowledge of the duties and rights of freemen. There were the industrious Piedmontese, the enterprising Genoese, among whom Mazzini was born — a countryman of Columbus — there were the amphibious Venetians and the Lombards rejoicing in their fertile plains, and there, as the imagination followed the ridge of the Apennines toward the Strait of Messina, were the Tuscans, famed in letters; the Umbrians, wearing in their aspect the tokens of Latin descent; the Romans in their center of art; the gay Neapolitans, and further south the versatile Sicilians, over whose valleys rolls the smoke of the most famous volcano in the world. As we traverse these regions in thought we recognize them all as parts of one Italy, yet each inhabited by Italians of a different character from the rest, all speaking Italian, but with a difference in each province; each region cherishing its peculiar traditions, which reach back to the beginning of civilization, and its peculiar usages observed for ages."

QUIET PEOPLE.

THE misgovernment of the world is carried on with such an amount of talk that one has seldom time to think how little would suffice. Half a dozen well-chosen words would generally be better than whole conferences and debates. But, since people must speak first and choose their words afterward, everybody's time is taken up in saying that something was said, in saying that something quite different was meant, and in saying something fresh, which has to be explained in its turn. It naturally results that both wise and foolish people have broken much silence in praising it; and that, like abstract virtue, it is admired, but seldom practiced. It is in vain to point out that the silent fool often passes for a man of wit, because the fool who has wit enough to know this and act accordingly is not properly a fool. Were he a fool he would not keep silence. The negroes attribute this wisdom to the chimpanzee, who, they say, is a man, but will not speak lest he should be made to work. Silent people get through the world as well as their talkative neighbors; every one talks for them; their nod is interpreted where another man would have to make a speech; and every one is willing to excuse them, as the sailor excused his parrot, for, if they do not speak, they think the more. Foote, the actor, boasted of his horse that it could stand still faster than some horses could trot; and the silent man is often enabled, by the value attached to his rare utterances, to say more by his silence than a voluble talker by a string of phrases. No doubt there is a kind of silence which is the reverse of talk, and is in itself eloquent. A prisoner who reserves his defense, a witness who refuses to answer a question, a man who holds his tongue when his character is assailed—in short, all the cases in which "silence gives consent," are rather silence as the negation of speech than as a positive quantity.

It is quite easy to imagine loquacity in a deaf-mute. He may not have power to utter a sound, yet, in the strict sense, he is not perhaps a silent person. And silence kept on purpose to express, by its very existence, an emotion of the mind, is only a substitution of signs for speech. Such is the reticence displayed by the well-known epitaph on a tombstone in Fulham churchyard, where, after the name, age, and date of death of the lady buried below, three words only are added by way of epitaph—"Silence is best." The estimation of the deceased by her surviving relations could not be more fully expressed had the whole stone been covered. When a character is to be given to a drunken or dishonest servant, the omission of the words honest and sober is sufficient. But this is not the silence of quiet people. Too often they resemble rather the chimpanzee than the par-

rot, and are not talkative because talk may involve them in further exertion. But it is not easy to pry into their motives of action, or rather of inaction. The Ulster folk have a proverb, "Nobody can tell what is in the pot when the lid is on." It is not the most unselfish people who talk least about themselves. To some the facts which relate to their personal history are too serious for words.

Unspeakable are the emotions of silent people; a sense of personal dignity or shame keeps them quiet; but to most of them is vouchsafed a single confidential friend, into whose ear all the pent-up feelings are poured from time to time.

This is especially the case with quiet girls. What they say in their moments of confidence we can not pretend to know. Whether they are really quiet or only shy is equally beyond the superficial observer. That they are not found to impede the pleasant flow of soul in ordinary society is often because they are eminently good listeners, and do not yawn at the utmost commonplaces. That another should commit himself to speech, with or without anything to say, is enough to interest them. They are thought sympathetic, and often draw forth the tale of woe long hidden. Men begin by telling them of other loves, and often end by loving them for themselves. In this they have a great advantage over the more gushing sister. They take no notice of a foolish speech, and a man imagines he is safe in their hands. He can say things to them which, said to any one else, might have serious consequences. A quiet cousin is thus often a great blessing to a man. He can talk a matter out as if with himself, and imagine afterward that he has had counsel upon it. The quiet girl hears him with outward sympathy, agrees with all his views, and, when asked to help him to a decision, gives her casting vote in favor of the course he already prefers. He finds after a time that her quiet receptiveness is grateful to him; and, when she has seen him safe through an engagement or two, and half a dozen flirtations more or less serious, he suddenly finds out, or at least tells her, that he has really been in love with her only all the time.

Quietness is sometimes a sign of bodily health. The nervous man who is always stirring is seldom strong. But when a man is thoroughly wrapped up in himself and his own importance, perfectly satisfied with his position and prospects, the cut of his clothes, the length of his whiskers, the attenuation of his umbrella, and the lustre of his hat, the chances are that he is very quiet. Such men are habitually well-dressed; but as they get on in life they cling to old fashions. They are not considerate for others, yet they give very little trouble. They exact the utmost service, but make no fuss about it. They are painfully regular and punctual, but never seem put out by other people's want of order. They are bores at a dinner party, wet blankets at a picnic, mere sticks at a ball; but excellent as officers, admirable parsons, and much sought after by match-making mothers. It is they who carry off the heiresses; who always save money; who are never in debt or difficulty, as other men are; who are regular in their devotions, and invaluable on committees, where they always get their own way without trouble or fuss. They habitually wait till every one else has spoken, and then make the single remark which concludes the matter, and which seems as if it had risen to the surface, like cream, of itself.—*Saturday Review.*

THE TRUE FEAST.—When the barbarous practice of stuffing one's guests shall have been abolished, a social gathering will not necessarily imply hard labor and dyspepsia. Perhaps, when that time arrives, we shall be sufficiently civilized to demand pleasures of a higher sort. True, the entertainments will then, in one sense, be more costly, as culture costs more than cake.

MRS. A. M. DIAZ.

THE best part of one's life is the performance of his daily duties. All higher motives, ideals, and conceptions are of no account if they do not lift a man up and strengthen him for the better discharge of his duties in the ordinary affairs of life.

THE IDLER.

INDUSTRY is a great teacher, but many there are who persistently refuse to put themselves under its tuition. They prefer the negative pleasures of inaction. Go where you will, you will find society with its burdens to carry in the form of men and women who are hunting the shortest and easiest road to pleasures that are separate and apart from all responsibility, pleasures that delight the taste, and are desired for their emptiness.

Society marshals a large army of good-looking ciphers. They flash in the sunlight of flattery and applause, and they are so scrupulously guarded by counterfeited elegancies that one might suppose a heart of great upheavals existed under that preponderance of gorgeous apparel. But they are like the empty bubbles; they will not bear tapping.

Some persons love idleness for its own dear sake; but a great portion of society is too much taken up with conventional nothings to permit the influx of healthful influences. They are hemmed in and their individuality is enfeebled by influences from without.

Energy and a fixed purpose are the strong meats upon which the inner forces of character subsist. Inaction will weaken these forces until they will have no weight in the intellectual balance.

Viewing the subject in a worldly sense, the man of means can better afford to be idle than the man without means; but we are slow to believe that God in His economy ever set apart a place in His vineyard for the idler. A man either pays his way in this world, or he filches from God's storehouse.

It is a sad misfortune to be drawn into the vortex of luxurious idleness. It lulls to inaction the higher attributes which, if properly cultivated, uplift the soul and bring it nearer the model of perfect manhood. A man's influence is only commensurate with the force of his inner life. A stream can rise no higher than its fountain-head; and we can not be too careful with regard to the outcroppings of our lives and the influences that mould the general features of society.

Idleness is not necessarily absolute inaction. Nicholas Gimcrack industriously pursued the butterfly, but neglected his family.

If the good time coming is a literal truth, as some persons suppose, when "Holiness unto the Lord" shall be written on the bells of horses, the passions of man confined within the limits of usefulness, and the warning elements of society wrought into happy consistency, then may we hope for a triumphant wave of public sentiment that shall sweep down every barrier to human advancement and break at the door of every palace of leisure, and call forth its dreamy occupants into an atmosphere pregnant with higher aims and nobler achievements.

W. R. GREGORY.

BIRD LORE.

DISCOURAGED once I walked away
Within the wood to be alone,
Just as the sober edge of day
Its stillness on the leaves had thrown.

Upon the moss, with lips compressed,
I sat in silence; yet, within,
A cheerless voice to me addressed,
In weary words, a dismal din.

It said, "Toil on o'er stubble field,
Its garnered stores can you command?
Or when did fruitage ever yield
A harvest open to your hand?

"And yet, if labor brought success,
When you were struggling for the prize,
A transient joy proved none the less
A lasting sorrow in disguise."

It said that death might bring relief,
But life had not one ray of hope:
Made up of care or cankering grief
Was my relentless horoscope.

Just then, there fluttered at my side
A little bird with loaded beak,
And filled four mouths that opened wide,
Then sang of things it could not speak.

And clearly trilled the warbler's note,
In it, it seemed, a lesson lurked,
For tired I thought this yellow-throat,
And I, too, was but overworked.

The conflicts, which my brain had burned,
Were stilled—the song had brought me rest;
Home to my tasks I soon returned,
The bird went back into its nest.

MARIE S. LADD.

Literature, Mental Science, and Education.

True philosophy is a revelation of the Divine will manifested in creation; it harmonizes with all truth, and can not with impunity be neglected.

INJURY TO BRAIN AND INSANITY FOR SIXTEEN YEARS.*

THE following facts were given by Proctor Thayer, Professor of Surgery in Cleveland Medical College:

"Some years since, a lady called at his office and requested him to oblige her by visiting her husband then in jail at Cleveland. She gave the following pitiable and interesting history of the case:

"Sixteen years previously, they were residing in the State of Indiana, engaged in farming. While plowing, his team became unmanageable, because of a colt getting entangled in the harness, and ran away. In his effort to stop them he was dragged some distance, and was seen to be thrown violently against a fence, his head striking one of the rails. He was taken up insensible and after recovery from the concussion, was found to be suffering from mania. The mental disease assumed the acute form and was continuous; at first variable in intensity, but at times characterized by exhibitions of the most dreadful violence. He had at various times been placed in insane asylums and dismissed as incurable.

"After a varied experience of confinement in the asylum and the jail owing to these attacks, he at last was placed in the asylum at Newburg, near Cleveland. When apparently every other means had been resorted to without avail, his wife desired that his head might be trephined, at the spot as nearly as it could be determined where he had received the injury. This she had often requested of others, and now insisted on with much earnestness, whatever the consequences might be.

"Thoroughly incredulous, the doctor visited the patient, and found him a raving maniac, whose violence had made him a terror. It had been found necessary to construct an iron cell, the upper part of which consisted of gratings. No one ventured into his apartments save under the greatest urgency and with extreme care. He would not permit a single thing to remain in his room, breaking furniture into splinters, and tearing bedding and clothing into threads. He raved continually in his desire to destroy imaginary enemies, save when he snatched brief intervals of sleep on the naked floor. Wild, haggard, and filthy, he glared through the grating at the doctor, who did not venture nearer even to make his examinations.

"His head being entirely bald, it was easy to observe that no depression existed as a guide for the proposed operation.

"His keeper joined in the request made by the wife, on the ground that in no way could he be made worse, and should he die in the effort to benefit him, even that would be a blessing. So without the shadow of a hope, but to gratify the wishes of the wife, it was decided to operate on the following morning.

"At the appointed time the Sheriff opened the door, and seizing the maniac, threw him on the floor, when by the assistance of the surgeon he was tied, and chloroform administered. Not the least guidance to the operation could be obtained from the contour of the skull, but the trephine was applied at the prominence of the frontal bone, that being the point to which he occasionally put his hand, as if he suffered pain there; this point also coincided with the seat of injury as described by the wife. The skull was found to be hypertrophied and more dense than normal, but nothing else was discoverable. The operation being completed, he was untied.

"As the effect of the anesthetic passed

* From the *Toledo Medical and Surgical Journal* for Sept., 1877.

off, he lay quietly, and as he opened his eyes they were observed to have lost their former wild expression. Directions being given to apply cold water to his head, and place a cot in the cell with attendants to control him if necessary, he remarked calmly, 'I sha'n't harm them.' The instructions were observed, and on the following morning, all were surprised to learn that the patient had been continually rational, and had asked for his wife and *baby*.

"When the doctor entered his cell, he inquired where he was, and why he was there? When the matter was explained, he expressed the greatest astonishment; and to the inquiry as to what he knew about it, replied that it seemed to him that he had just awoke, and that yesterday he was plowing; that his mare and colt got to cutting up, ran away, and that was all he knew in regard to it.

"The doctor asked if he would like to see the wife and child he had inquired after, to which he quickly replied, 'Oh, she can't come, she has just had a baby.' The wife and baby, the latter now a girl of sixteen years, had been waiting in an adjacent room and were now introduced to him. He did not know either of them. The wife had changed in appearance and the baby become a woman. In utter amazement he inquired, 'My God, what can this mean; it seems to me that I have only been asleep and that I was plowing yesterday.' The scene that followed can only be imagined. His recovery was complete, the whole sixteen years remaining a blank to him, and all knowledge of his injury a mystery.

"His mental derangement never returned, and having hired his father-in-law's farm in Cuyahoga County, Ohio, he pursued the occupation of a farmer for seven years, when he died of pneumonia. A post-mortem revealed no perceptible trace of brain disease."

[The blow which produced the injury, doubtless fractured the skull, causing a pressure upon the brain. The fracture was not such as to be indicated on the surface; still the blow producing such mental aberration should have led the surgeon to employ the process of trephining at, or soon after, the time of the injury, and thus have saved all those terrible years of insanity. We commend the faithful wife for her wise persistency in the right direction. This case shows that a pressure upon the brain may suspend normal consciousness for sixteen years, and that a man may thus be made a raving maniac without serious damage to the bodily health or lesion of the brain. The mental machinery was disturbed, but not ruined.—ED. PHRENO. JOURNAL].

GENERAL SCHOUVALOFF.

FOR months after the occupation of Constantinople by the Russians there were apprehensions that a fresh conflict would grow out of the agitations incident to the settlement of affairs between Russia and Turkey. The terms proposed by the Czar to the Sultan were not satisfactory to England and Austria, and both these nations threatened resistance *vi et armis* to an adjustment in which their "rights" territorial were not considered. In the early part of May the aspect was very forbidding for the peace of Europe. England was alive with martial preparations. Austria was organizing her army for speedy and effective action, while Russia was exerting her colossal energies to strengthen herself by land and sea against the onset of her probable foes. Meanwhile negotiations were going forward between ministers and special emissaries; and all the art and sagacity of veteran diplomatists were brought into requisition. Evidently the masses of the people in Russia, England, and Austria, and on the continent, did not want war, and the kings and courts were not united in sentiment on the question. So that the spirit of liberality displayed by the Czar, aided by the skillful management of his ministers, and by the quiet yet impressive attitude of Germany,

was successful in bringing about a temporary adjustment, at least of the international controversies.

Most prominent among these ministers is the Count Peter Schouvaloff, whose repeated visits to the court of Victoria resulted in the consent of England to the International Congress, which was held in Berlin in June. He was born of noble family, and received a liberal education. In 1845 he entered the service of his country, and distinguished himself as a soldier, winning rapid promotion. In 1857 he was made a Major-General of Artillery. In 1864 he became General Aide-de-Camp of the Emperor Alexander, superintendent of the Gendarmerie of the Empire, and head Privy-Chancellor of the Third Section of the Empire, a department which he entirely remodeled. In 1872 he was made General of Cavalry.

He had exhibited so much ability in the administration of the civil and political affairs which came within the scope of his official authority that the Government found it expedient to clothe him with important legislative or judicial functions at that time, and in 1876 he was sent to England as Russian ambassador to that nation. In the recent war with Turkey he performed important services, and added greatly to his reputation. When Prince Gortchakoff was ill, a few months ago, and it was thought that his withdrawal from public service was near at hand, Count Schouvaloff was deemed by many in authority to be the man best qualified to succeed the aged diplomatist.

His head and face, although imperfectly rendered in the portrait, show the man of energy, force, and influence. He is a natural critic of human character, and a natural leader among men, the elements of intuition, aspiration, and dominance being conspicuously limned. In many respects he reminds one of the German Chancellor, and if report be true that Bismarck and Schouvaloff are warm friends, their similarity in physiognomy but confirms the old proverb concerning "birds of like feather."

A VISIT TO HOWE'S CAVE.

THIS cave is situated in Schoharie Co., N. Y., a few rods from the depot of the Delaware & Hudson and the Albany & Susquehanna Railroads. It is thirty-nine miles from Albany, and about two hours ride from Saratoga on the direct route to Philadelphia. There is a good hotel at the entrance, which renders all needful accommodations of apparel, guide, etc., for exploring the cave. As the dwellers in Olympian fields are fabled to wear robes adapted to their abode, so the underground visitors must assume the habiliments and learn the speech appropriate to their temporary sojourn. All apparel which restricts perfect freedom of motion must be laid aside. Above ground this is quite embarrassing, and the ladies shrink in by-ways and behind doors on the approach of strangers; but once within, all is forgotten. Our party numbered four. Each carried a light; and, for the first time, graced a torch-light procession.

Passing down a wooden stairway we were met by a current of cold air that threatened chills, but the guide assured us that we should soon be sufficiently warm. At the entrance the sides of the cave are decorated with flesh meats, watermelons, etc., for it is the best of cellars, and the hotel supplies can be kept here for an indefinite period.

The first expansion in the course is called "The Lecture-Room." This is about one hundred feet long, six to forty in height, and six to ten in breadth. Next is Washington Hall, graced by two beautiful stalactites two or three feet long, which have received the names of "Washington's Epaulettes" and "Lady Washington's Hood." Washington has, however, by no means been honored by christening the most beautiful part of the cave. This room is quite remarkable as showing distinct traces of having once been the channel of a subterranean torrent. From Washington Hall our weird procession ascended by two flights of stairs to the "Bridal Chamber," so called from having been the scene of the marriage of two daughters of the discoverer and original proprietor. In this is a table or counter of stone of considerable length and perfect as if for sale in the market. The "Giants' Chapel" is of immense height. Vainly we lifted our torches and tried to penetrate the black vault overhead. From its "Rostrum" a voice seemed to say, "Wonderful! wonderful! full of wisdom are my works."

This cave is claimed to be the only one in the world lighted with gas; and, passing into the long and nearly straight "Harlem Tunnel," the effect produced on the vaulted darkness by the jets is very beautiful. First the light gleams like a point, then we can trace its rays till they nearly fade in darkness. As these are lost, the faint beams of another jet appear, and these gradually gather in a shining spot; then, like their predecessors, scatter and die. These lights in which we glory, scarcely serve to break God's darkness.

Ascending a rocky table at the right, we stand in the "Ghost Chamber." Here is an excellent study for a resonant instrument. The guide thrust his head into a conical orifice about two feet in diameter, and his low muttering was magnified to an inhuman roar. Members of our party attempted to do likewise, but in vain. Only a certain pitch of voice can produce this singular resonance. In the "Music Hall" the fall of a plank gave a thunderous sound which reverberated back and forth on the rock-walls with deafening violence. Again and again the experiment was repeated, and each time the volume of sound increased as if the inorganic elements delighted to display their power to the audacious mortals who had presumed to invade their domain. We longed to test these echoes with varieties of sounds and musical notes, but time forbade. Like gentle Mercy following the dooming trump of Justice, the gentle ripple of water invaded the stillness. Pardon the vagaries of imagination! Her wings acquire a superhuman swiftness in these weird scenes, among the ever-opening vistas whose alternate light and shadow the eye vainly seeks to pierce. A stream is purling by our side over its pebbles. The water is so strongly impregnated with lime as to be unpleasant

for bathing, but it is cool and delicious to the taste. A fringe of stalactites shows that our brook has expanded into the lake, and a quarter of a mile to rest in the boat is very agreeable. Yet the exhilaration of the air here gives strength and elasticity alike to youth and age, and even the most delicate rarely complain of weariness. Physical difficulties vanish; climbing and scrambling become a joy. A pillar of rock three feet in diameter projects from the roof to the bottom of the "Lake" which is sometimes ten feet deep. "Table Rock" is a great, solid, detached mass, frightfully overhanging a beautiful line of stalactites just over the path.

After disembarking, the wildest and most interesting portion of the cave is reached. Sometimes the guide shouts, "Look out for your heads!" and down we go, forming a comical torch-light procession of right-angled figures. Then we straighten ourselves and climb the "Rocky Mountains," rightly named; afterward, down again in jumps of two or three feet, bumping our lanterns against the rocks and extinguishing them, or slipping and losing our overshoes in the soft, adhesive clay. All are shouting with the sport except the guide, who preserves his equanimity in spite of the liveliest sallies aimed directly at him. Yet he is so faithful and careful, so exact in his recollection of names, so truthful when questioned concerning the inroads art has made even underground, that we must be lenient if nature has not bestowed on him the faculty of perceiving a joke, especially when, to us, the best joke of all is his own solemn face.

The "Valley of Jehoshaphat" opens aloft into darkness which no light can penetrate. The roof is said to be one hundred feet high. This part of the cave is about one-quarter of a mile long. All the way the gently rippling brook loiters by our side, and we frequently pause to examine the pebbles in its bottom, or to bathe our stained hands. A bat, the solitary sign of life in this subterranean region, flies past, and occasionally a great drop of cool water from the overhanging stalactites splashes in our faces. It is very interesting to note the long seams in the flat rock that forms our roof. Through these the water is constantly oozing, and as if to beautify nature in its own way when untrammeled by art, it forms on every narrow opening a wavy line of tiny stalactites which will, in time, if vandal hands can be restrained, make a most beautiful translucent drapery.

Three passages open from the terminus of this "Valley of Jehoshaphat," but only one is accessible to visitors. This is the most beautiful and wonderful part of the cave. It is appropriately named "The Winding Way," for so tortuous and narrow is its labyrinth that often the whole party are out of sight of each other, though only two or three feet in a straight line intervene between them. The perfect correspondence between the sides of this rift show them to have been sundered by some mighty convulsion of nature. Over every prominence the soft white lime has formed an incrustation that smooths the rough angles into lines of grace. In one place a pillar two or three feet in diameter has cracked off from one side and lies diagonally across "The Winding Way," having entrapped a boulder between itself and the opposite wall.

Having threaded our labyrinthine course through "The Winding Way," we entered "The Silent Chamber." Here the guide retreated with all the lights, that we might realize total darkness. But he did not remain long enough for us to appreciate it, and silence was impossible to our exhilarated party. Our conductor, in a melancholy tone of despair at our zeal and energy, asks if we will go farther. "Yes! as far as possible," is our reply, and we proceed to the hardest scrambling of all, down "Fat Man's Misery." Though our party contained no fat man, we were forbidden to struggle through the opening two feet square, leading to the rotunda, as in summer it contains too much water to be safe for visitors.

So we retrace our steps through the beautiful "Winding Way," up the steeps of the "Rocky Mountains," pausing ever and anon to hold our torches behind some great pendant veil of stalactite, and wonder to see it all aglow. Once the passage seems entirely blocked up as if, during our wanderings the giants and ghosts of these won-

drous vaulted chambers had been aroused and had imprisoned in this dark domain those who so ruthlessly awakened their echoes. But our guide shows a way through the apparently solid wall, and we soon recross the "Lake" and approach the entrance. We have walked six miles and have been three hours underground, and the coming out into the heated summer air after the cool, highly oxygenated atmosphere of the cave, is stifling. It is like inhaling the breath of a hugh smelting furnace. The skin, for several hours after, is flushed, and feels as if blistered. As we emerged we met a party entering. While curiously investigating each other's appearance, a lady in a man's hat mournfully asked, "Will it pay?" "Try," was our response, knowing that the temperament and intellect of the visitor would settle the question.

In the vicinity of Howe's Cave are considerable limestone and cement works. The entire region is rich in minerals, fossils, barytes, etc. Geologists as well as other scientists are busy here seeking cabinet specimens. The finest points in the cave have been stereoscoped by means of a calcium light and sometimes an exposure of two days was required to obtain a correct picture.

Howe's Cave was discovered by the cattle of one Lester Howe. On every hot day they were observed to collect in a certain spot less shaded than other parts of the field. This led to conjectures that a cave might produce the cool current they so much enjoyed. A hunted fox is said to have finally led his pursuers to the entrance.

Large amounts have been expended in making this interesting spot accessible and agreeable to visitors. As the temperature is about 60° throughout the year, and the cave is driest in winter, that is the most pleasant time for its exploration. Every day brings many visitors, and nearly all who go, desire to repeat the excursion. M. L. C.

THE LOON.

"AS crazy as a loon" is an expression which the reader has heard now and then. We do not say that we are ready to explain the origin of this expression, although it probably arose in Scotland, and bears some relation to the restless conduct of the bird, especially when in confinement, it then showing perpetual excitement. Its habit of bobbing the head up and down in the water may be another reason for the simile. The Loon belongs to the family of swimming birds known as Colymbidæ. Willoughby comprises this family under one general name, to wit, douckers or loons. He describes them in general thus:

Douckers have narrow, straight, sharp-pointed bills, small heads, and also small wings; their legs are situated backward near the tail for quick swimming and easier diving. They have broad, thick legs, by which they are distinguished from all other kinds of birds, and broad claws like human nails. Of these douckers, there are two kinds—those which are cloven-footed, but thin-toed, having lateral membranes along the sides of their toes, and no tail; and those that are whole-footed, and caudate, nearly approaching the tribactylæ, which are deficient in the back toe. "These are not without good reason called good douckers, for though they dive much, and continue long under water, as soon as they are up, dropping down again." To the second class the loon which is illustrated in our engraving properly belongs. Perhaps it is better described by some authors, like Montague and Richardson, as the C. Glacialis, or Great Northern Diver, of which a somewhat particular portrait would be this: head, neck, and upper tail-feathers glossed with deep purplish green, on a black ground, with a short transverse bar on the throat, collar on the middle of the neck, interrupted above and below, and the shoulders white, broadly striped on the shafts with black; the whole upper plumage, wings, sides of the breast, flanks and under-tail coverts black, all except the quills of the tail marked with a pair of white spots, near the tip of each feather. The spots form rows, are large

and quadrangular on the scapulas and interscapulas, round and smaller elsewhere, but smallest on the rump. The under plumage and inner wing coverts are white, the axillary stripe down their middles is black; bills compressed, strong and tapering, slightly arched above, and the lower mandible channeled beneath, appearing deeper in the middle; margins of both mandibles are, particularly the lower one, inflected; inner wing coverts particularly large; tail of tinted feathers much rounded; total length thirty-six inches, extent of wing forty-eight inches. Specimens in mature plumage may vary considerably in total length, or upward of an inch in the length of the wing, and more than half an inch in the length of the tarsus.

The young differ considerably from the

A Loon.

old birds. When less than a year old, the head and the whole posterior part of the neck are of an ashy brown. On the cheeks are small, ashy, and white points; throat, front of the neck, and other lower parts pure white; feathers of the back of the wings, and of the rumps and flanks, of a very deep brown in the middle, bordered and terminated by bluish ash; upper mandible ashy gray, lower mandible whitish; feet externally deep brown, internally as well as membranes whitish. At the age of a year both sexes show a transverse blackish-brown band toward the middle of the neck, about an inch in length, forming a kind of collar. The feathers of the back become of a blackish tint, and the small white blotches begin to appear; at the age of two years the collar is more defined. The upper part of the head and neck is varied with brown and greenish-black feathers; the numerous blotches on the back and wings become more prevalent, and there are other markings of white. At the age of three years the plumage may be deemed established.

Fish is the principal food of the loon, the herring being particularly relished. It nestles in small islands, and on the banks of fresh waters. Its habitat is the colder regions of the globe, as the name glacialis implies. But some species of the loon have been found even in the south of England, according to Richardson. It is particularly abundant in the Hebrides, Norway, Sweden, Russia; and is found, but not numerously, in North America. Loon Lake, in the State of New York, was so called because of the many loons which made it their home. It is rarely seen on land, its limbs ill-adapting it for walking, but can swim with great swiftness to a very considerable distance under water. When it comes to the surface it seldom exposes more than the neck; takes wing with difficulty, and flies heavily, though swiftly, and frequently in a circle around those who intrude upon its haunts. It has a loud and very melancholy cry, something like the howling of a wolf, or the distant scream of a man in distress. Its cry is said to portend rain. Many years ago, according to one writer, during an intense frost, two loons were taken alive, in the Thames below Woolwich, in England, and kept in confinement for some months. On the approach of spring, they began to show great uneasiness, and at length escaped from confinement.

ASHES OF ROSES.

A rose once bloomed within a young girl's heart—
A dainty flower, with dewy petals fair,
That shed a fragrance o'er her life, and crowned
Her days with joy, and seemed to breathe a sweet
And lasting perfume o'er all things. To her
All laws suspended seemed to be; no growth
Were possible, for perfect seemed all things;
No death, nor slow nor swift decay could come
To aught; a bright and glorious light baptized
The earth, and life was all a joy. But now a change
Is wrought; the love of her young life—the life
Of her sweet rose of love has slowly died,
And naught is left to beautify her days
So desolate. No fragrance now, nor light
Of glory crowns her life; decay has touched
All things, and weary care has carved the lines
Of age where bloom should be, and in her heart,
Where blossomed that fair rose, a small, cold heap
Of sexutless ashes lie.

MAY MC COLLUM.

THE UNITED STATES AT THE PARIS EXPOSITION.

ON the first of May the International Exposition, undertaken by the Republic of France, was successfully opened. As little attention has been given to this affair in the PHRENOLOGICAL heretofore, it may be well for us to consider briefly the general arrangements. The Exposition buildings consist principally of two vast structures, one erected on the heights of Trocadéro, the other in the Champs de Mars, the former having been built as a permanent addition to the grand structures so numerous in Paris. In the center of the Trocadéro is a pavilion or grand dome with a tower on each side, rising to the height of about two hundred and fifty feet. Flanking the pavilion are galleries extending in the shape of a horse-shoe toward the river Seine. The total length of the building is sixteen hundred feet. The pavilion in itself is an immense affair, and contains the largest concert hall in the world, with a capacity of seating eight thousand persons. The towers of this building are the highest points in Paris, and are furnished with elevators capable of carrying a hundred or more visitors at once. The view from the summit of these towers is very extensive, taking in the Valley of the Seine for miles on each side.

The Champs de Mars building is more than two thousand feet long, by one thousand in width, the principal front being parallel with the Seine, and located seven hundred feet from the quay. The general plan of this structure is rectangular, embracing three pavilions, which are divided by galleries running the whole length. At the corners rise higher pavilions surrounded by domes which are one hundred and thirty-two feet in height. The style of architecture is semi-Oriental, whose sweeping curves are agreeable to the view. Between these two great buildings the Seine flows, the whole intervening space being used exclusively for the purposes of the Exhibition. Here is the Pont de Jena, which has been widened and inclosed for a crossing place, so that the river offers no obstruction to travel, and contributes an element of picturesque variety to the affair.

Foreign nations have shown considerable interest in the Exposition, many having erected graceful or curious buildings, model cottages, etc. It was feared in the outset of this enterprise that the United States would not make a suitable exhibition of its resources—industrial and natural. The appropriation by Congress was small, and that hampered those Americans who were desirous of sending their wares to Paris. However, the quality of the exhibits in the American section is reported as creditable, and in some particulars without a rival. The assortment of labor machinery sent by our manufacturers is varied and rich, although generally of a light class, and by no means comparing with the vast area in our own unexampled Centennial.

Among our manufacturers who have sent goods, we might instance the Brown & Sharp Manufacturing Company, of Providence, R. I.; the Blake Crusher Company, of New Haven, Conn.; Messrs. Henry Disston & Sons, of Philadelphia, the celebrated saw-makers; M. B. Edson, of New York; J. A. Fay & Co., of Cincinnati, Ohio; Gardner & Co., of New York, whose perforated chair seats have become universally known; Lovegrove & Co., of Philadelphia, prominent manufacturers of steam engines; the Morse Twist, Drill, and Machine Company, of New Bedford, Mass.; Snyder Bros., of New York, another firm prominent in steam enginery; the Western Dynamo-Electric Machine Company, of Newark, N. J. In agricultural apparatus the superiority of American inventions is strikingly shown. The reapers and mowers, harvesters, and binders, present a fine array. The gold and silver work sent by some of our manufacturers compares favorably with the best English and French. One table service exhibited by Messrs. Tiffany & Company is notable. It is the property of a successful mining operator, and was made for him at the cost of $200,000.

Among American artists who are repre-

sented in the display of fine arts, are Bierstadt, Rolman, E. Johnson, Bridgman, Miss Gurdon, J. G. Brown, Quartley, Gifford, and others whose names are well-known at home for masterly execution with the pencil. American contributions are arranged in eight groups, viz.: Works of Art, Educational Apparatus, Furniture and Accessories, Textile Fabrics, Mining Industries and Products, Mechanical Industries and Apparatus, Food Products and Agricultural Implements. The space allotted to the United States is small as compared with that occupied by the larger European nations, and some time before the Exposition was opened it were said that the applications for space was sufficient to fill an area of double the allotment, so that it was necessary to make provision elsewhere to accommodate the shipments.

Canada is well represented in a beautiful structure specially fitted up under the northwest dome of the main exhibition building. It embraces a transept over eight hundred feet square, with towers at each end covered by domes—one hundred and eleven feet square. In the exhibits of the country, its rich forests and mining products, etc., are arranged with admirable taste and skill.

VITALITY IN FOOD.

Organic Condition—Constituents—Phosphorus for the Brain—Vital Force—The Best Condition of Food—Decay in Bread—The Poison of Decay—Freshness—The Vitality of Fruits without Cooking.

WE have frequently had our attention called to the fact that the food of man must consist of organized matter. The entire process is constantly before our eyes. We see plants of various kinds taking up the earthy and inorganic matters and shaping them into the various kinds of food with which animals are nourished. No one supposes that either ourselves or the animals that we may feed upon can take the inorganic matter that goes to make up plant life and make even one satisfactory meal of it. If we eat sand or iron, will it not remain sand or iron? Silica and iron are found to be constituent parts of some of the plants which we eat, and it is from these that the system gets what is needed.

What, then, becomes of all the theories of supplying the system with preparations of iron, which are not organic matter, in cases in which the blood is deficient in iron? Can it be put into the blood in that shape, or into any of the tissues as a part of their organic structure? We know that mercury, for example, can be put in so that it will remain sometimes for years, but it does not prove itself a desirable inmate. It is not assimilated like bread or other organic matter, and the sooner we are rid of it the better. We see, then, that the idea of taking iron or salt or phosphorus or phosphate of lime in their inorganic forms, expecting them or any portion of them to enter into our structure to nourish us, or to remain there

for any good purpose, is in direct opposition to a great law of nature.

CONSTITUENTS.

Perhaps we have been confused by the theories which have been very freely put forward within a few years analyzing the constituents of our food, and undertaking to decide just how much we must eat of this or that in order to meet the wants of our system and keep ourselves well built up.

PHOSPHORUS FOR THE BRAIN.

We have been told that phosphorus was a very important ingredient of the brain, and if we wished to have our brains active, we must eat largely of food which contained phosphorus — fish, for example. Consequently, we have had in all parts of the country a great variety of numskulls, besides some people who ought to know better, calling for fish; and if the delusion had gone on in a direct line, doubtless we should have had the ancient garum revived (for decayed fish develops phosphorus), and these fishy philosophers would have carried around their little bottle of condensed "brain food," with which they would have sauced every dish they ate, unless, indeed, they might have preferred to take it in private doses.

We have some reason to believe that the animal system, when in good condition, may transmute organic substances to some extent, and manufacture out of any of our common food all the elements needed for health and effectiveness. The comparatively good health of many races who live upon a limited variety of vegetable food favors the idea that this can be done.

It may be desirable to know these facts about the constituents of food, for the purpose of providing dietaries for large bodies of people who live a confined life, like soldiers and seamen and inmates of charitable or penal institutions. Indeed, they have been very useful in calling attention to cases in which we were notably destroying the wise provisions of nature by our boltings and concentrations, which *deprived* the body of its proper materials for nourishment. We, doubtless, may injure our system in that way, especially if it be not very vigorous; but the converse does not follow, viz., that by a special supply of nutriment to any one organ, we can develop that into any marvelous proportions or efficiency. Hence we find this fishy theory sinking into forgetfulness almost as rapidly as it rose into notice.

If we take wholesome food, every part of the system is nourished by it, and we do not need to take one kind of food specially for the nerves, another for the blood or the muscles, and so on. If we keep the vital force strong, that will distribute to each organ as it needs out of the general supply. This

VITAL FORCE

is something we do not fully understand, partly because it can not be analyzed. The dissecter who cuts up an organism to find it, is very like the boy who pulls up his planted seeds to see how fast they are growing. It is generally allowed to be the power within which coördinates all the movements of the organism, especially those not immediately within the domain of the will. It does not appear that we can by any means directly nourish it or give it any sudden or extraordinary activity. In our present artificial condition our main business is *not* to injure it, and hence the rather negative aspect of the usual dietetic directions. We do so many bad things that it is almost necessary to continue reiterating, "Don't do this!" and "Don't do that." But there is one very important affirmative direction which we have hitherto ignored too much, viz., that we take organic matter while it is in its best condition.

THE BEST CONDITION OF FOOD.

It is not sufficient that it has been at some previous period collected by plant-life into organic form. Coal was once organic matter, but we can not digest it now. When the vitality of the plant which collected the particles leaves them, they tend to separate, and then commences an early retrograde action toward the inorganic. We call this action decay, and we are not always acute to discern when it commences, nor the penalties we pay for neglecting it. The first penalty is a great loss of nutrition.

DECAY IN BREAD.

Try it with bread. Compare fermented Graham bread with unfermented, weight for weight, and though it may be evident enough that the latter has more water in it, you will soon find out that it has far more nutrition. Let any one who has been accustomed to eat the unfermented, substitute for it the common baker's fermented bread, and after he has eaten so many slices of the puffy, spongy stuff that he is ashamed of his apparent greediness, he will very likely find himself growing hungry before dinner-time. If you wish further comparison, make the two kinds of bread into toast, or thicken pease, asparagus, or tomatoes with them, and the softness of the fermented becomes flabbiness itself. Perhaps you may *like* it better as a condiment, but that is not the question. In the course of the fermenting process, which is the first stage of decay, it has lost from five to fifteen per cent. of its nutritive power. Some maintain that this is its greatest fault, which is serious enough when we consider the aggregate of such loss throughout the country. Besides this, however, it has commenced a seriously degenerative process, which has not been entirely stopped by the heat. It is generally conceded not to be fit to eat until it has been twenty-four hours out of the oven. It has by that time passed through evident structural changes, which some people are wise enough to call "ripening." What do they mean by the "ripening" of a dead body which has already been within an hour of disgusting decay, arrested only by a long baking? What kind of a ripening is that which ends in decay or mould, unless it dries up, which it readily does if exposed freely to the air? If this be the "staff of life," it is indeed a broken staff, piercing many a hand which bears upon it.

THE POISON OF DECAY.

A further idea we get from the acknowledged fact that this panary fermentation produces alcohol, a poison which has done more mischief to the people of this country than all other poisons combined. If any one waits to be convinced of the noxious character of decaying matter, let him investigate the production of alcohol and he will find that it is all and always produced by the decay of vegetable substances. Prussic acid will kill in very small doses, and it requires not more than double the dose of pure alcohol to prove as fatal and kill as quickly as the prussic acid. The great reason why we do not recognize it as a violent and fatal poison is, that in all the drinks in which it is used it is very largely diluted. Still it kills its thousands and tens of thousands yearly. As Dr. Jewett says, it is the product of degenerative decay and death, and it produces degeneration, decay, and death always and everywhere in all the organized beings who partake of it.

This is far more than a mere fancy. Alcohol is not the only violent poison that is manufactured in whole or in part by a fermentative process. Tobacco obtains a large proportion of its deadly power by fermentation in the "curing" of the leaf. Tea leaves also are fermented, at least those which are prepared for our market. Much more frequently than we suspect, do we allow our food to approach the boundary line of poisonous decay. Cases can be quoted to show that mouldy bread and mouldy cheese are poisonous. The warmed-over beans and potatoes are not so good as the fresh, because they have lost some of the qualities that recommend them for food. Warm them the second time and they are worse yet. In fact,

FRESHNESS

is a much more important quality in our food than we have been in the habit of supposing. We allow that decayed fruits and wilted vegetables are not wholesome food, but we are slow in learning where to draw the line. We understand in the case of animals that vitality preserves from decay, and we note when an animal is alive and when it is dead, and we should do the same with vegetables, though for a different purpose. The vitality of vegetables is something which can enter into harmony with ours, can feed and nourish it. We do not always need to kill it; we might perhaps with propriety say that we transmit it into our own vitality.

THE VITALITY OF FRUITS

is easily ascertained, for when they die they begin to decay. Sometimes a local injury causes a local decay, but the latter soon infects the whole structure, and this is one reason why a partially decayed fruit is wholly unfit for food. Many fruits retain their vitality for a long time after they are removed from the stem on which they grew. There are many varieties of apples, pears, and other fruits which do not even mature until some months after their proper period for harvesting, but the vitality is definite enough. Kill that by heat or frost, and there soon follow changes of structure, indicating plainly enough the loss of vitality. Not only is their appearance more attractive when alive, and their taste more delicious, but their refreshing and satisfying effects are much more evident. They bring a feeling which is better than stimulation or exhilaration, and which, for want of any better term, might be called

SUPREME SATISFACTION.

It is not every one who realizes this benefit from eating live fruits; his digestive apparatus may not be in a condition to appreciate them, or it may be loaded down with grosser food, but many do recognize this satisfied and invigorated feeling after fresh fruits which they do not after cooked fruits.

Seeds and grains, which are the special depositories of vitality for future growth, have a large amount of this invigoration, which remains in them a much longer time than in fruits and can always be tested by "sprouting." I suppose it is very seldom that these, at least in their whole state, are used long after their vitality has departed. There is so great vitality in wheat, that it has been known to grow when thousands of years old. Maize is not so vigorous, and something of the same difference is observable in their ground products.

We encounter here a question of some difficulty. How much of this vitality remains after grinding? Millers say that very close grinding destroys "the life" of flour, and many people know that meal is not so good for it. Of course, meal can not *grow*, but may not some of the abounding vitality of the grain remain for a while to preserve the vital character of the food? It may be that the gradual departure of this makes the marked difference between fresh and stale meal and flour.

As for the satisfied feeling, we find just this after eating uncooked oatmeal, wet with water and seasoned with dried currants. It makes an admirable ration during continuous mental labor, and a refreshing drink, when sufficiently diluted. Experiments with other uncooked meals or grains are not very extensively recorded. Green corn has received some commendation in this line, and there may be many other things which can to advantage be eaten.

WITHOUT COOKING.

I do not wish to be understood as advocating the theory advanced by some that we can take all kinds of food better uncooked. Certainly there are a great many articles which we now prize highly which we could scarcely eat or digest at all without cooking, such as pease, beans, lentils, and many of the vegetables. Nor would I be understood as saying that fresh cooked fruits and grains are innutritious. But I would have those interested in such matters carefully keep the life in seeds and fruits and vegetables as nearly as possible up to the time when they are to be eaten as well as note the higher vitality and greater pleasure derived from eating living vegetable food. Careful, intelligent experiments will bring out truth. They may help also to clear up some such problems as the imputed "medicinal" value of grapes and celery.

More careful observation in the culinary preparation of food might also greatly improve our knowledge of the changes to which they are subject as well as our care in their preservation. We should be more likely to understand the true nature of the "ripening" process in cheese, and even of the value of milk after it has stood a few hours; of the lack of vitality and value in fats; the character of old eggs, by whatever process preserved; of the dietetic value of sugar and many other things which affect our food questions. Cases and illustrations multiply in our mind, but we must close in spite of the interest of our theme. We hope you will not dismiss it from your minds so promptly.

JULIA COLMAN.

PLANTS FROM ANCIENT SEED.

GARDENERS advise the planting of fresh seed from year to year, and seedsmen do not guarantee to their customers the production of plants from seed more than two or three years old. This is particularly the case in reference to the succulent vegetables raised in our gardens. Wheat, corn, and oats may be kept for several years, and not lose their germinal power, but if we planted a field of grain and used seed ten years old, as seed is now grown, we would not expect a very large crop, for probably more than one-half of the seed would fail to sprout. The ancients, particularly those of

PEA PLANT FROM SEED FOUND ON A MUMMY.

Egypt, raised grain of peculiarly fine quality. This has been shown by the production of plants from seeds discovered in the wrappings of mummies. Wheat so found has been experimented with in this way. Our engraving represents a plant produced from a pea found on a mummy. General Anderson, of England, discovered in an Egyptian sarcophagus a few dry pease. These he preserved carefully, and, on his return home, planted them in the rich soil of the island of Guernsey. Some of the seeds germinated, and the plants from them on maturity yielded sufficient pease to plant a considerable tract of ground. The result with regard to both plant and fruit was somewhat peculiar. The development of stalk was considerable, some of the plants attaining a height of more than six feet, while the blossoms were numerous, of exquisite odor, and of a delicate rose-pink hue. The most striking feature, however, was the stem, which instead of trailing, as do the pea plants with which we are familiar, was small near the root, but became considerably thickened as it ascended, requiring a support to sustain it in the upright position, and the pods, instead of being distributed around the stem, as in the ordinary plant, were grouped about its upper extremity.

The plant evidently belongs to the ordinary variety, as the general character of the fruit indicates its alliance, although the flavor of the mummy pea has been pronounced to be superior in delicacy to that of the modern.

THE ROMAN SOLDIER AND HIS FOOD.

A COMPARISON WITH MODERN DIETETICS.

THE Roman soldier, in the time of Julius Cæsar especially, was the best type of vigorous, physical manhood, probably, that the world ever saw. For fortitude and endurance in warfare, labor and suffering in campaigns, and perseverance under hardships, his reputation has not upon the whole been surpassed. In his day there were no railroads for transport, nor many bridges for passing rivers; no Goodyear to supply india-rubber for protection of feet, head, or body against storm and damp. He had no pontoons, or telegraph, or balloons. No powder, gun, rifle, or cannon aided him in destroying his enemies. His was a hand-to-hand conflict, with javelins, swords, and battering-rams, in which his opponents almost invariably succumbed.

How did the Roman soldier come to possess such a wonderful strength of physical and mental organization that he could accomplish the feats of prowess which fill so large a space in history? We know how he lived out-of-doors, inhaling plenty of pure oxygen. If he had lived in one of our modern, stove-heated houses, with its lack of ventilation, and breathed an atmosphere tainted with carbonic oxide and carbonic acid, besides the animal exhalations, with window-blinds and sashes closed, and curtains drawn, we think that his animal (*anima* means breath) powers would not have been equal to the achievements he has put on record. But the Roman soldier, besides breathing, had to eat. No matter how much fresh air and exercise he had, his physique would have failed with imperfect food. He could not have developed muscle enough to climb mountains, swim rivers, fight hand-to-hand, and endure privations, unless his digestive organs had been fed with aliment which fully counterbalanced the waste of tissue consequent upon his exertion. In speaking of muscular actions, we are apt to regard the muscles themselves as the sources of power. But if we should remove the nerves which connect the given muscle or set of muscles with the spinal or cranial system of nerve centers, it would be found that it would become as powerless as the engine from which the steam has been cut off. It is therefore more in accordance with the facts to speak of nerve force as the primal source of all the muscular forces of the body. In this light we can not conceive of the Roman soldier as other than a person of immense nerve power. It might not have been an intellectual nerve power, but it must

have been a neurotic power sufficient to sustain and control in a wonderful manner the still more wonderful combination of mechanical forces found in the muscular system. It is very generally acknowledged by physiologists that there is more or less waste of nerve and muscular tissues during the exercise of the varied functions of the human body. No light is seen, no sound is heard, no touch is felt, no smell is perceived, no process of respiration, digestion, secretion, excretion, cerebration, etc., is kept up without a waste of the tissues which are the agents of the functions named. Now the Roman soldier must have had just this tissue destruction, and he must have supplied it in his food, or else he would have broken down under such severe tests. History shows that he did not break down, and what he mainly subsisted upon is a very interesting matter.

In looking over the list of the commissary supplies of the Roman army, we do not find the modern diet table. *Frumentum*, grain or wheat, was the main article of diet. A bag of wheat was a regular part of the outfit. It was whole wheat, not flour. When the soldier was hungry, all he had to do was to eat it by chewing it whole on the march, or at a halt or in camp, after soaking it in water, rubbing up with a stone, and either uncooked or boiled. Any of the animals he might chance to find were caught and appropriated as additional food, and were so much clear gain. There might be at stationary camps other articles of diet, but in the long run unbolted wheat was his principal food. It is not here asserted that no other combination of fresh air and food does not furnish the same food material; but it is desired to emphasize that wheat has the undisputed character of a perfect food. Dr. Nichols says he entertains the profoundest respect for a grain of wheat: "It is a most marvelous combination of substances, admirably adapted for building up and sustenance of the tissues of the human body." It is emphatically the food of mankind. Its history can be traced back to the earliest ages. It has been found buried with the mummies of Egypt, and among the Lydians it was stamped upon their money as a symbol. (See illustration). Our modern civilization has adopted it, or rather preparations from it. The raising of wheat and carrying it to the market occupy the attention of large portions of the human race. Last year it took three hundred full-sized ships to carry the surplus crop of California wheat to the markets of the world. The manipulations and consumption of flour from wheat furnish employment for a much larger number of people than the aggregate of producers and freighters; and if we include those who eat the food prepared from wheat and wheat flour, there is hardly an individual in any civilized community throughout the world who does not come into the most intimate relations with bread, pies, cake, puddings, gruels, crackers, muffins, dumplings, etc., all owing their substance to the wheat grain.

An Ancient Lydian Coin.

The consumption of wheat flour as food being so universal and large, may we not be allowed to infer that the characteristics of the tissues of the bodies of our race must be determined in some measure by this flour?

The old Roman soldier was a perfect animal in organization; and may we not deem it reasonable to conclude that his diet may have made him physically, or that he could not have attained his condition without his wheat or some other analogous grain? What diseases were prevalent among his comrades we know not, as no hospital records have been handed down to us. In the face of what we know and have already stated, may it not be admitted that generally he enjoyed good health?—for no sick or diseased soldiers could have done the work that was accomplished by the Romans.

From the tables published in Johnson's

"How Crops Grow," we ascertain the following:

Composition in one thousand parts of substance of—

	Water.	*Ash.*	*Potash.*	*Soda.*	*Magnesia.*	*Lime.*
Wheat grain	143.	17.7	5.5	0.6	2.2.	0 6.
Wheat flour (fine)	136.	4.1	1.5	0.1.	0.3.	0.1.

	Phosphoric Acid.	*Sulphur. Acid.*	*Silica.*	*Sulphur.*
Wheat grain	8.2	0.4.	0.3	1.5
Wheat flour (fine)	2.1.	0.0.	0.0.	0.0.

Amount of starch in wheat	59.5 per cent.
" " flour	68.7 "
Albuminoids in wheat	13. "
" flour	11.8 "

It will be seen that there is a considerable withdrawal of mineral elements by the conversion into flour. The withdrawal of potash is equal to about four-fifths of the amount contained in the grain; of soda, five-sixths; of magnesia, $\frac{17}{20}$; of lime, five-sixths, the same as of soda; of phosphoric acid, nearly seven-eighths.

Note that phosphorus or phosphoric acid is found largely in the albumen of the nervous tissues. It is also found in the bony tissues.

Chemical constitution of nerve (Vangeala):

Albumen	7.00.
Fat	5.23.
Phosphorus	1.50.
Osmazone	1.12.
Acids, salts, sulphur	5.15.
Water	80.00
	100.00

Albumen is found solid in nerves. Its composition, according to Scherer, is as follows:

Carbon	54.9
Hydrogen	7.0
Nitrogen	15.0
Oxygen, Sulphur, Phosphoric acid	22.4.

Here, then, is a withdrawal in flour of nearly seven-eighths of the proper nerve food found in the wheat, the main ration of the old Roman soldier. It is probably the soluble and assimilable form of phosphates, one that the digestive system can absorb and the nutritive system appropriate to its sustenance. Thus modern or civilized mankind are generally living upon a food which is deprived of seven-eighths of its nerve-sustaining element, *phosphoric acid.*

We raise the question seriously, Does the use of fine flour promote (that is, assist, predispose to) affections of the nervous system? Mark, we do not ask whether if mankind now received in its bread eight-eighths of phosphoric acid, instead of one-eighth, there would not probably be less disease of the nervous system?

Suppose the Roman soldier had had only fine-flour bread, and got one-eighth, would he not have sensibly suffered? Could he have carried his sixty pounds of baggage? Indeed, we find that the absence of what Cæsar calls *frumenta*, corn or grain (not our maize or Indian corn, which was then undiscovered) or wheat from their rations, was the cause of tumults, disturbances, and sometimes war. Suppose Cæsar had started a first-class flour-mill, and abstracting almost seven-eighths of the nerve food from the wheat, had fed his soldiers with the unnatural manufacture, may we not be allowed to think there would have been equal trouble? For one can not imagine such a large diminution without a corresponding lack of tonicity in those tissues needing and accustomed to a full supply. To put it differently, suppose Cæsar had removed 87½ per cent. of his soldiers' proper nerve food from their wheat, would he not have had a right to expect only 12½ per cent. of energy, tone, or vital force in those soldiers' nerves? And yet this is just the state of things our boasted modern civilization has put us into.

It can not be denied that neurotic complaints are very common and chronic. Never were there so many insane people; never was a physician called upon oftener to treat

nervous diseases than at present. How often people drop dead from heart disease, found upon examination to be solely from the want of proper innervation. How marked is the prevalency of paralysis. How the nerves of special sense suffer. We have trouble with the eyes very commonly. Our children, if we have any, grow up thin, ethereal, *nervous*, anæmic. They die of consumption, and break down readily under the discipline of schools. Then see what a vast amount of nervous diseases in women in every condition and class of society. Go into any public assembly in New England, see the cry of distress and care impressed upon the countenances—a cry of something they lack. It is a beseeching look. Some say it is from hard work! Well, it is hard work to fight the battles of life with but 12½ per cent. nerve food!

May it not be that the diet of most of our farmers—*white bread, pies, cakes, doughnuts, crackers*, deficient as they are in the full amount of nerve food—is partly the cause of their own, and particularly their wives', decay and distressed looks and decayed teeth and weak nerves, that tremble and shake and ache when engaged in services which should be pleasurable, not painful? Consider also the amount of nerve force it takes to digest the starch, which is the main constituent of flour, compared with the amount required to digest animal food containing the same amount of nerve food.

Sometimes cases of dyspepsia (difficult digestion) seem to depend upon the fact that the nerve power (so scantily fed upon flour) is all used up in labor and work and in carrying on the other functions of the body, so that there is none left to digest the food. In other words, the system is too tired to eat. What follows? As a matter of course, the whole system is unnourished, the other functions fail in their full performances; and if this is carried too far, the nervous system rebels, and we have neuralgia, headaches, and distress in various parts of the body; and if these things be continued, disease results, sometimes followed by death.

The fact is, that we are surrounded constantly by the causes of disease. Vegetation is subject to the same law. The moment animal and vegetable systems are reduced in their vitality, then step in parasites, animal and vegetable, which are called disease. In potatoes, for instance, that rot, it has been found that there is a withdrawal of lime to nearly seventy-five per cent. of the normal quantity. The aphides and fungi and microscopic algæ prey upon the tubers, and by some are thought to be the cause of the potato rot; but as they are found wherever there is decay, animal or vegetable, it is more probable that the loss of the mineral constituents so weakened the vitality of the potatoes that they fell an easy prey to the insects and spores which are everywhere present, ready to act if they get a chance.

Our present system of agriculture allows the ground no time to rest; and when the soluble salts of mineral plant food are exhausted from the soil, plants grown in that soil can not get their proper mineral food. The old Mosaic law of letting the ground enjoy the rest of a Sabbatic year (one in seven) allowed the undissolved lime, soda, potash, magnesia, salts, etc., to become soluble under the atmospheric influences, so that when the land came to be planted the next year, it possessed the materials in a soluble form for making growths with their full amount of mineral constituents. Thus built up, the plants resist the aphides and the fungi, and, as people say, they do not rot.

If mineral salts are so necessary to healthy vegetation, is it unfair to reason that animal life needs them just as much? And as nerve force is so indispensable a part of animal life, do we reason incorrectly when we assert that in our opinion nervous diseases would not be so prevalent if the human system were fed with all the 100 per cent. of phosphoric acid that God intended it should have? Ours is such a bustling, active, nervous age, that we need more nerve food than ever before in the history of the world. How many of us wear out, how many of us suffer, how many of us fail, how many contract improper, exciting, debilitating habits and mannerisms from just the want of proper nerve food, none can tell.

One thing is certain, the old Roman soldier did not give out until the introduction of wealth brought on an age of the most extravagant living the world ever saw. If the diet and habits had been kept down to the wheat standard in the palmy days of the empire, Rome, too, might have withstood decay (other things being equal) a much longer time. And what perpetuity can we expect for our own country, if we rear a weak race with feeble nervous systems on food which has lost nearly 87½ per cent. of its phosphoric acid?

THOMAS J. GREGOR, U. S. A.

NOTES IN SCIENCE AND AGRICULTURE.

Nutrition of the Eye.—According to the London *Lancet*, the most interesting discovery of the year in physiology is that made by Boll, that the retina possesses in health a peculiar red color, which is constantly being destroyed by the influence of light, and is as constantly being regenerated by the ordinary processes of nutrition. The "vision red," or "erythopsin," as its discoverer names it, attains its maximum after a night's rest and sleep, or when an animal has been kept for some hours in darkness; it is soluble in solutions of the biliary acids and in glycerine, and probably plays a part in the production of the red reflection from the fundus of the eye seen on ophthalmoscopic examination, as well as in all probability in the ordinary acts of vision.

The Radiometer.—Professor Cooke, of Havard College, has made an interesting series of experiments upon the Radiometer, for the purpose of determining the true cause of the force generated in the operations of the instrument. The results of his investigations indicate in the strongest manner that the action of the moving vanes is due to *heat*, and not to *light*. For some time this view has been entertained, but we have Professor Cooke's evidence that almost demonstrates it to be a fact. He considers that the Radiometer is a very beautiful example of a heat-engine, and it is the first that has been made to work continuously by the heat of the sunbeam. As for the manner in which it acts, there is some difference of opinion among physicists, but the results of Professor Cooke's investigations indicate strongly that the action of the vanes is due to the same cause which determines gas pressure; and, according to the dynamical theory of fuses, this amounts to saying that the effect is due to molecular motion.

Remedies for Insects.—Messrs. Landreth & Sons, of Philadelphia, have given a detailed account of remedies for some of the insects which prove troublesome in gardens. A summary of the conclusions would be like this: (1) The greenish-black jumping beetle, a tenth of an inch long, feeding on both cabbages and turnips while young, is kept in check by dusting with sulphur and plaster, or by applying slightly a solution of whale-oil soap or tobacco-water. Sowing thickly and repeatedly may secure a crop, or by selecting different localities. (2) The insect which causes the club-foot in cabbage may be repelled by lime and wood-ashes, but to change to fresh land is better. (3) Wire worms, cut worms, and grub worms may be killed by the slow process of digging around the injured plant for them; but the best way is to give clean land, well cultivated and enriched, with frequent waterings to stimulate growth, which will tend to insure against these underground enemies. (4) The green worms are best cleared from cabbages by hand-picking. (5) Plant lice are driven off by whale-oil soap, sulphur, plaster, tobacco-water, etc., if applied early, so as not to injure the taste of the cabbages. As a rule for guarding against insects generally, make the ground rich, keep it clean and mellow, cultivate often, and water freely.

Anatomical Wisdom Shown by Insects.—Observers of the habits of insects have learned much with regard to their intelligence in departments which men had been accustomed to consider peculiarly their own. For instance, it is known that some insects possess a wonderful amount of anatomical learning. An ant will show extraordinary deftness in killing his prey, attacking one much larger than himself, and having disabled it will set to work and skillfully saw asunder certain portions of the body, discovering a nice appreciation of the anatomical structure of its victim. A late traveler in the East has been observing the habits of insects, and speaks of the intelligence exhibited by certain spiders in killing wasps, and other large and poisonous insects which become entangled in their web. He noticed that these spiders inflicted two wounds in a large insect like a wasp, one in the neck and the other in the head, and that the wasp was dead in about a minute. Thus the spider indicated a knowledge of the centers of vital function in the wasp, which if reached by its sharp claws, would soon put his enemy out of condition to defend itself.

A Good Tree to Raise.—Among the many valuable timber trees of the North is that known locally as red pine in the Canadian Dominions, and through the northern and north-western States as Norway pine, but is entirely different from the tree so called in

Europe, which is a kind of spruce; it is known in Canada as red pine.

The tree is found as far south as Wilkesbarre, Pa., and in the Northwest along with the Lambert pine. In Maine and New Hampshire it is found mingling with the forests of white and other pines, and is remarkable for its tall trunk, sometimes 80 feet in height to the branches, and nearly of uniform size, until it attains the height of 50 feet or more, and for its smooth reddish bark. The leaves are in twos, form long sheaths, are five or six inches long, and free from the bristling, rigid, sharp points that distinguish the pitch pine. This tree may be distinguished at a distance by the greater size of the terminal bushes of the leaves. The wood is white, tinged with straw color, and tough, elastic and moderately strong. It possesses a clear, fine grain, which works up to good advantage, and when dressed presents a smooth, silky finish. It is not liable to shrink, split, or warp much in seasoning, and, technically speaking stands well, which renders it a choice and valuable wood for all mechanical and domestic purposes. It attains a height of eighty to one hundred and twenty-five feet, and a diameter of twenty-five to thirty inches, and is more slender than the pitch pine, yielding commercial timber in logs of ten to eighteen inches square, and from sixteen to fifty feet in length. It is of even growth, with a tendency to slight curvature at the butt. This pine is usually very solid about the center of the log, and has but little sap wood, and is, therefore, one of the most economical and profitable to the manufacturer.

A Good Hint for Photographers.—An English physician, Dr. Thomas Buzzard, who was recently undergoing the usual ordeal in a photographer's gallery, conceived the idea of suggesting some arrangement for relieving the eyes during the time it was necessary to keep them fixed upon a given object. In his own case he found that staring at a certain spot caused his vision to become indistinct, and surrounding objects became lost as in a thickening mist, whilst as the sitting was prolonged, a feeling of giddiness and even faintness was experienced. The plan he suggested was to draw upon a piece of card, about four inches in diameter, a clock-face, and add the usual Roman figures. This card was fixed about eight feet distant, and when the sitting began he fixed his eyes upon the figure XII., then upon the I., II., III., and so on all around the clock, shifting his gaze leisurely from one figure to the other. The result was the sitting ended without any sense of strain, and he seemed to have sat without an effort.

We would add that a card with several bright colors arranged so as to rotate, would be an aid in sitting uneasy children.

Circumventing the Canker Worm.—For a few days past a gentleman has watched with vexatious regret the devastation of his fine fruit trees, and was about to apply the axe as a remedy, when, noticing how easily the worms are beaten or shaken off the tree, he experimented to prevent their return. He found that fine dry ashes, lime or plaster heaped around the trunk of the tree would surely prevent their ascent; and, being voracious eaters, they soon perish on the ground, or may be readily gathered up and destroyed, as they collect in multitudes, attempt to climb up the lime, and fall back without reaching the firm bark of the tree. The plan has been satisfactorily tested, and the lime heaps about the trees in nearly every garden show the determination to preserve valuable fruit by thus arresting the blighting scourge. A steep slope around the trees may be made with dirt; then cover with fine ashes or lime, and scatter up a little on the bark, and the worms are effectually stopped. They can not climb up a loose, dry, floury substance.—*Practical Farmer.*

A New Fruit.—A new and distinct species of fruit always secures attention, but it is long since anything has absorbed as much interest among fruit growers as the recently introduced Japanese persimmon (Diospyros Kaki). The tree itself is highly ornamental, a prolific bearer, as hardy as the American persimmon, and fruits much earlier, thus escaping the astringent quality of the American species, that never ripens before frost. When dried, it surpasses the fig in flavor, and can be kept a long time in excellent condition. Of the half dozen varieties of "kaki," or Japanese persimmon, introduced, one of the principal is described as large, round, and shaped like a Rhode Island greening apple. Its color is rich golden, and the meat juicy, vinous, and firm. Another variety is oblong, resembling in shape a minnie ball. This has a deeper, darker shade than the other, is soft, sweet, and delicious. This variety attains a very large size, and is the one usually dried and prepared like figs for market. Some think this persimmon destined to rival the peach in popularity, which may be the case south of Baltimore. Northward, its hardiness has not been sufficiently tested, although a little winter protection during youth will unquestionably save it permanently. In California, it has already been extensively distributed, but in the East the sale has as yet been confined to the Kissena Nurseries on Long Island, N. Y.

The Missing Link.—Professor Rudolph Virchow, of the University of Berlin, has been seeking for the "Missing Link" between man and the lower animals, but does not seem to have found it. He claims that fossils of men have certainly been found in the quaternary age, and admits that it is possible that such remains are to be found in the tertiary. "Not a single fossil skull of an ape has been found that could really have belonged to a human being. . . . . As a matter of fact we must positively recognize that, as yet, there always exists a sharp line of demarkation between man and the ape." And in regard to the progressive development of man, after he had left the supposed lower animal origin, the Professor declares

that "if we gather together the whole sum of the fossil men hitherto found, and put them parallel with those of the present time, we can decidedly pronounce that there are, among living men, a much greater number of individuals who show a relatively inferior type than there are among the fossils known up to this time." Concerning the old cave-dwellers, pile-villagers, and bog people the Professor maintains that they prove to be a very respectable society. They have heads so large that many a living person would be glad to possess such. Professor Virchow does not plant himself in opposition to the theory that man had his ancestors among other vertebrate animals. He would not be astonished if proof should be adduced of such an origin. But he frankly avows that every positive advance made in the study of the subject has "actually removed us farther from the proof of such a connection." So we need not yet be sure that apes were our progenitors.

An Instrument to Magnify Sound.—The world of wonders opened up by the telephone and the phonograph, says the *Scientific American*, is already vastly enlarged by a third discovery called the microphone. Professor Hughes, of Kentucky, the inventor of the type-printing telegraph, now residing in England, has added this fresh laurel to the American genius. It is difficult to give an intelligible description of his instrument, but what he does is to place in the circuit of an electric battery a substance in a fine state of subdivision (as mercury in the pores of carbon), which he calls the transmitter. This substance is found to be extraordinarily sensitive to sounds which to the ear are almost or quite inaudible; and when connection is made with a telephone, these sounds may be heard with great distinctness a hundred miles away. In some recent experiments made in the presence of Professor Huxley, and reported in *Nature* for May 16, "the delicate rubbing of a fine camel's-hair pencil over a smooth wooden surface, ... although of course inaudible in the ordinary way, was rendered evident in the telephone by a crackling noise, of which the intensity was almost painful to the ear." In like manner the footsteps of a fly have been betrayed to the sense. Mr. Edison claims, with a good show of reason, that Hughes obtained the chief features of the microphone from him.

Crystalline Coating for Paper or Wood.—Böttger recommends the following for giving paper and wood surfaces a crystalline coating: Mix a very concentrated cold solution of salt with dextrine, and lay the thinnest possible coating of the fluid on the surface to be covered by means of a broad soft brush. After drying, the surface has a beautiful, bright mother-of pearl coating, which, in consequence of the dextrine, adheres firmly to paper and wood. The coating may be made adhesive to glass by doing it over with an alcoholic shellac solution. The following salts are mentioned as adapted to produce the most elegant crystalline coating, namely: sulphate of magnesia, acetate of soda, and sulphate of tin. Paper must first be sized, otherwise it will absorb the liquid and prevent the formation of crystals. Colored glass thus prepared gives a good effect by transmitted light.—*Journal of Chemistry.*

Home-Made Superphosphates.—In a letter to the *Farmers' Advocate*, a correspondent writes the following: "I place side by side two old flour barrels, in one of which I put whatever bones come to hand. In the other I put a bucketful of wood ashes from the house stoves, moisten them well and scatter a few bones on the top. The process is repeated as the bones and the ashes are produced, and at the end of the year some five or six barrels are the result. The mixture should be kept well moistened without being wet enough to allow any drainage, and in about eighteen months the small bones will have disappeared altogether, and the large ones will have become soft enough to be easily crushed with the shovel while mixing the compost. The result is a manure which is far too powerful to use without mixing it with at least ten times its bulk of muck, or some fertilizing earth, and which can then be applied with excellent effect, especially to turnip land. I am of opinion that it is almost, if not quite, as valuable as many of the purchased superphosphates, and the plan is worth adopting, if it were only to get rid of dangerous ashes and unsightly bones."

Salt a Preservative of Wood.—In the salt mines of Poland and Hungary the galleries are supported by wooden pillars, which are found to last unimpaired for ages, in consequence of being impregnated with the salt, while pillars of brick and stone, used for the same purpose, crumble away in a short time by the decay of the mortar. It is also found that wooden piles driven into the mud of salt flats and marshes, last for an unlimited time, and are used for the foundations of brick and stone edifices, and the practice of docking timber after it has been seasoned, by immersing it for some time in sea-water, is generally admitted to be promotive of its durability. There are some experiments which appear to show that, even after the dry rot has commenced, immersion in salt water effectually checks its progress and preserves the remainder of the timber.

The Express Business.—Eighteen thousand men are now engaged in the express business. Express companies cover sixty thousand miles of railroad, and it is estimated that their messengers daily travel three hundred thousand miles. Three thousand five hundred horses are employed, and over eight thousand offices are required to transact their business in, and an amount of capital is invested not less than $30,000,000.

MRS. C. FOWLER WELLS, *Proprietor.*
H. S. DRAYTON, A.M., *Editor.* N. SIZER, *Associate.*

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CABINET COLLOQUY.—No. 7.

HOW HAMILTON REFUTED PHRENOLOGY.

NOT long since, we accosted a gentleman who was making the rounds of our cabinet, and scrutinizing our specimens. After pointing him to some casts which possess special features of interest to the phrenologist and reader of history, and explaining briefly their peculiarities of organization, we entered into conversation with our visitor, touching the relation in nature of form to expression. His observations were of such a character that we were soon convinced that he was well versed in anatomy, and by habit accustomed to critical investigation in scientific lines.

"I have not given much attention to your subject," remarked he, "although I confess it has many attractions for a mind constituted as mine is. I will be frank enough to state that in my reading I have occasionally met allusions to Phrenology which were not of the complexion to incline one who is desirous of making the most of his time to enter upon its study."

"You refer to the assertions which certain writers make to the effect that Phrenology lacks an anatomical or scientific basis?"

"Yes, and to assertions that it is but a chimera, whose assumptions were long since refuted by critics like Jeffrey, of the *Edinburgh Review*, Sir William Hamilton, Dr. Carpenter, and others."

"If you have a few minutes' leisure, I would like to show you how thoroughly the attacks of these very men resulted in their own confusion."

"I can give you a few minutes now, and should say that if you can show me a well-authenticated account of the controversy in which Hamilton bore so prominent a part, and demonstrate the unsoundness of his positions, I shall take your statements for granted with reference to the other eminent opponents of Phrenology; for Hamilton is usually referred to among my scientific friends as having demolished the system *ab initio*."

After inviting our guest into our private office and providing him with a chair, we produced two old volumes bearing an Edinburgh imprint, in which the correspondence and documents relating to that celebrated controversy were published at length. Citing the letter of Sir William Hamilton, which under the date 19th January, 1828, was published by him in the *Caledonian Mercury*, we pointed to the fourteen celebrated "Phrenological propositions," and their "Counter propositions" which Hamilton therein sets forth as determining the truth or falsity of the Gallian doctrine. Requesting him to mark the fact that the eminent critic designates these fourteen contested points as "Phrenological," therefore, according to Drs. Gall and Spurzheim the credit or reproach of the data they contain, we proceeded to read them as follows:

I. *Phrenological Proposition.*—"In old age the walls of the skull increase in thickness, and the cases in which the cranial

bones wax thinner as the subject declines in life, constitute exceptions from the general rule."

Counter Proposition (Hamilton's).—"The rule is here the exception, and the exception the rule."

"What have you to say, sir, with regard to this, in the light of present anatomical learning?" we asked.

"Simply this, that the first statement is pretty nearly that which physiologists now recognize, from the fact that in old age the brain diminishes in volume, and osseous matter and membranous or other tissue fill up, in great part, the spaces left by such diminution."

"Here then, certainly, the advantage was on the side of Phrenology. Now for the—

II. *Phrenological Proposition.*—"Young and adult *(sic)* persons have no cavities between the tables of the frontal bone; and the real frontal sinuses occur only in old persons, or after chronic insanity."

Counter Proposition.—"The absence of the sinus in young and adult subjects so far from constituting the universal law is a rare if not a doubtful anomaly."

"Let us read the three propositions and their counter fellows which immediately follow," we said, "as they bear upon similar points."

III. *Phrenological Proposition.*—"Before the age of twelve or fourteen the frontal sinus never, or almost never, exists."

Counter Proposition.—"Before this age the sinus is frequently, if not generally, present."

IV. *Phrenological Proposition.*—"The frontal sinuses are rarely to be found in women."

Counter Propositions.—"1. These cavities are rarely absent in the female cranium. 2. Even more rarely than in the male."

V. *Phrenological Proposition.*—"The sinus, when present, betrays its existence and extent by an irregular elevation of a peculiar character, constituting a bony crest or ridge, or blister, and is distinguished from the forms under which the Phrenological organs are developed."

"Now," we said, "it should be understood that these 'Phrenological Propositions' are Hamilton's own interpretations of statements occurring in the works of Gall and Spurzheim, and through them he impugned the validity of their entire doctrine. Dr. Spurzheim protested against the form and evident spirit of several of the fourteen, and declared four of them to be clear misrepresentations."

"It seems to me," said our visitor, "there is much truth, however, in these propositions. Science to-day recognizes this as a general rule, that the frontal sinuses do not exist in children, vary much in size, and are larger in men than in women. Further, their presence, especially when large, is indicated by osseous elevations or ridges. Dr. Gray, high authority in anatomy, you know, says they give rise to the prominences above the root of the nose. But fifty years ago little was known concerning the development of the sinuses, and it is becoming to admit that if the phrenologists made some trifling mistakes in setting forth their anatomical discoveries they were entitled, nevertheless, to consideration for the substantial truth of their contributions to science."

"You perceive then, sir, how the very novelty of their announcements produced unfriendly criticism; men like Gordon, Jeffrey, and Hamilton, who were opposed to the Phrenological doctrine of the mind, being led by their metaphysical prejudices to decry the valuable in what had a strictly anatomical relation, ere they had fairly examined it. You observe that Hamilton positively states that the absence of the sinus in young subjects is 'a rare if not doubtful anomaly;' that it 'is frequently, if not gener-

ally, present' before the age of twelve or fourteen, that it is 'more rarely absent in the female cranium than in the male,' and that 'there is no correlation between the existence and extent of a sinus and the existence and extent of any bony elevation;' if you have had opportunities to observe the structure of the skull in many different human subjects, and have noted these points, you can scarcely agree with the learned metaphysician."

"No, it is clear to me that Hamilton had not examined many crania, for had he, the fact that a large frontal sinus does indicate itself in the contour and prominence of the nasal eminence and the superciliary ridge, must have been convincing to his logical apprehension. In the living person I can determine with some degree of accuracy the comparative extent of the sinuses, and do not consider it a difficult matter."

(*To be continued.*)

PHYSIOLOGY IN THE PULPIT.

NOT long since we heard a minister say, in the course of a sermon on the duty of a Christian, that one of the most important departments of that duty is the healing of diseases physical and mental, and, with an apologetic preface for alluding to the subject, he remarked that science to-day largely concerned itself in tracing human maladies and infirmities to their sources, and it was found that the most destructive and baneful were transmitted in the germ from parent to child. Measures, then, which would tend to purify the fountains of life and so prevent the descent of vicious physical and mental elements, should be set on foot as an essential part of Christian work.

This is about the length and breadth of that minister's allusion to a subject whose commanding importance among the vital issues of the day is obtaining the earnest examination of some of the best minds in Europe and America. We were pleased when he broached it, but were disappointed by the wholesale and rapid manner in which he treated it. Few ministers, to be sure, have the courage to enter upon the public elucidation of the questions involved in heredity. They fear the disapprobation of prominent men in their congregation for "meddling with matters out of their sphere," and there is, too, the misgiving lest they should incur the censure of the Conference or Synod for uttering things contrary to the precepts of the Manuals or the Canon law. There are, however, a few incumbents of the pulpit who read and observe for themselves in the book of human nature which is spread open before them, and who note the relations subsisting between moral weakness and bodily infirmity, and their discourses are replete with admonition and illustration on the treatment which must be administered to the body and the culture required by the mind. Two or three of these have gone into the statistics of the subject, and to a length which enthusiasm only would lead, but no diminution in their audiences has resulted, and no summons to appear before a grave tribunal to answer charges of heresy, or of teachings inimical to the safety of the Church, have as yet been laid upon their study table.

Why should men fear to announce the truth? Ye "teachers of righteousness," ye that are set "as watchmen upon the walls" for the safety of the people, can ye forbear to tell your people of the causes of the most grievous ills they suffer? You deplore the weakness and folly of society in tolerating many abuses, many festering sores, which occasion a world of expense and care to the industrious and provident; why not show, in the clearest light and with

trumpet tongue, the causes of the trouble? why not take the axe of truth and apply it to the root of the evils?

ASSURING HONESTY.

IT is proposed by some enterprising citizens of New York to organize a company for the purpose of assuring merchants of the honesty of their employés, the consideration of such assurance being a scale of premiums adjusted to the responsibility of the service. This we deem a good undertaking, and if carried into practical effect it will exert a wholesome influence upon the morality of business life. One of the chief difficulties in the way of making this movement practical will be the adoption of a method for the efficient inspection of the subjects whose integrity is made the matter of insurance. That is, it will be a very intricate mathematical computation which may determine an average of commercial honesty, and we are apprehensive that if the statistics of defalcation, embezzlement, etc., during the past ten years are made the basis of such computation, the premium rates will prove so high as to render the enterprise unavailable to the ordinary tradesman.

There is, however, one method which science proffers in aid of an undertaking of this character, and if its promoters be men of general intelligence—we are informed that they are "prominent"—they can scarcely be ignorant of that method. Of course the reader understands that we refer to Phrenology, and, if conversant with its principles and application, he doubtless entertains the view that a company formed to insure honesty would, from the very nature of its transactions, require the assistance of a trained phrenological examiner. If merchants and employers generally were conversant with phrenological science, they could be their own insurers against the peculations of dishonest clerks, since they would be enabled to discriminate between those who are likely to prove faithful in the discharge of their duties and those who are inclined to irregularity and impropriety.

The Autumn Session of the Institute.

OUR readers noticed in the SUPPLEMENT of the July number the announcement of the next regular session of the AMERICAN INSTITUTE OF PHRENOLOGY, an institution which has come to be regarded by the friends of the science, as a great reforming agency of the times. It may be a long time before a course of instruction in practical Phrenology will be deemed a prime essential in a teacher of the common school, the professor of a college, and the incumbent of a pulpit; but it will come. Certainly those who deal with the mental faculties can not know too much in relation to the original elements of the mental constitution and the influence of their combinations; and as man is a great factor in the world's history, why should a man know more of chemistry, natural philosophy, and natural history, than he knows of himself, body and mind, especially the mind? One man succeeds in business better than others because he has a better understanding of mankind. People are pleased with him, and they can not tell why. Throngs of people run after certain lecturers and preachers. One teacher is sought after as widely as he is known, others have all they can do to get or keep their places. One man in the realm of statesmanship, without much culture, with poverty to struggle against, with all social disadvantages, nevertheless rises to the highest positions, and when measured by comparing him in any other respect with other men, he is not seen to be greater in

talent, in force, or in moral worth; but he somehow *understands mankind*, and suits his conduct to the special dispositions of those he has occasion to influence. President Martin Van Buren remembered every man's face and name, and though he was thronged with people to whom he was introduced, he would recall the names of groups of men who had been presented to him years before in the very order of their introduction; and that fact made him President of the United States. Of course he had talent and worth, but he made every man that shook hands with him and met him afterward, feel that he was specially remembered.

We have known men, who could say the right word at the right time, mould every man like wax; we have known others who were strong, wise, and grand in all the great essentials of worth, yet failed to comprehend the spirit and disposition of persons, and therefore could not please them, influence them, or govern them. We have no favor for the trickster and sharper, for him who uses his talents to mislead mankind, but we would plead for that knowledge of character which every honest man has a right to possess. There is no good reason why honest, true men should not be as skillful in reading character as tricky politicians, gamblers, and speculators are. Men have a right to be as wise as serpents, but should also be as harmless as doves.

Our Mentorial Bureau.

"He that questioneth much shall learn much."—*Bacon.*

To Our Correspondents.

QUESTIONS OF "GENERAL INTEREST" ONLY *will be answered in this department. But one question at a time, and that clearly stated, must be propounded, if a correspondent shall expect us to give him the benefit of an early consideration.*

IF AN INQUIRY FAIL TO RECEIVE ATTENTION *within two months, the correspondent should repeat it; if not then published, the inquirer may conclude that an answer is withheld, for good reasons, by the editor.*

WE CANNOT UNDERTAKE TO RETURN UNAVAILABLE *contributions unless the necessary postage is provided by the writers.* IN ALL CASES, *persons who communicate with us through the post-office should, if they expect a reply, inclose the return postage, or what is better, a prepaid envelope, with their full address. Anonymous letters will not be considered.*

COURSE OF READING.—T. W. E.—If you are bent toward literature, you need to read in almost every department; for a *litterateur* should know something, as much as possible, in fact, of everything. But literature has its specialties, like all other professions, and if you have a choice of a department, like history or biography, or science or sociology, or poetry or essays or fiction, your reading should have a particular application to the department. Being young, however, you should read the best authors, in as many spheres as possible, so as to form a good foundation. You should read attentively, taking notes of whatever specially interests you. You should not read a page without thinking over the subject-matter of the thought. Endeavor to impress your mind with the views of the author.

SLEEP.—D. C. L.—Man is a creature of habits. By an eminent writer he is termed "a bundle of habits." He is superior to the brutes, and so adapted to live in a higher sphere. He has the teaching of his own experience and of the world for his admonition, and these relate as much to the physical nature as to the mental. Regularity is found to be the secret of strength of body and mind. Proper habits are based upon regularity. People who live the longest are those who follow a kind of routine from day to day, in which the process of physical recuperation largely enters. When tired, a man should rest—that is a law of nature. Habit, however, governs the animal feeling. If a man be given to exercising body and brain at certain hours of the day, and to resting, sleeping, recreating at certain other hours of the day, he finds in time that his powers and faculties adapt themselves to the

order. The men who are given to following a certain order from day to day, if they permit it to be infringed, experience more or less discomfort and unrest. For instance, if a busy man, accustomed to retire to bed at ten o'clock P.M., attend a party or a place of amusement, so that his hour of retirement is deferred until twelve or one o'clock, he finds the next morning that six o'clock A.M., his hour for rising, has come too soon. He is not sufficiently restored, and in the course of the day he will work with inconvenience. There will be a sense of more than usual friction, lack of spirit and vim in the action of his faculties. We believe that a man should have a margin of inactivity after eating heartily; that he should not go from the dinner-table straight to the intense work of the desk or to the hard manual labor of the field. If one eat properly, that margin need not be great. A half hour's repose, we think, would be sufficient in most cases. People who gorge themselves, as animals are disposed to, may require hours to get rid of the heaviness and dullness which follow their meals.

COMPOSING IN SLEEP.—L. A. N.—Biological works abound in reports of similar experience. During sleep certain faculties may be awake and active, and even stimulated, and produce results whose character for finish and perfection exceeds any of the accomplishments of the person when thoroughly awake. Some of the finest works of poetry and painting have been imagined and thought out in sleep, if we are to believe what is recorded concerning their production. But generally one forgets enough of the train of thought or dream which occurred to him during the hours of repose to preclude him from making a practical use of the matter. We have frequently gone over in sleep an article or address upon some subject which had occupied a good deal of our reflections in the day-time, but in the morning found ourselves utterly unable to recall a single sentence, yet we were conscious of having done great things while asleep. The condition of sleep, because of the inactivity of certain organs, prevents that co-ordination of the faculties which is essential to the complete and permanent impression of thought upon the mind.

LIVER DISEASE.—Whether or not the complaint be curable, must depend upon the condition of the organ and the length of time during which the disease has been established. By the use of a very careful hygienic diet, manipulations, and fomentations, you may obtain relief and probably a cure.

SELF-ESTEEM.—J. S.—By endeavoring to act in accordance with one's sense of duty, propriety, and the perception of what is adapted to the circumstances; by accepting obligations and responsibilities, and working earnestly toward their successful performance; by the assertion of personal right and privilege; in other words, claiming what is your due and resisting aggression or encroachment, you will in time acquire more of this desired quality.

RED ANTS.—G.—Some housekeepers resort to hot water for relief from these closet pests, which must be often repeated. Some people say that powdered borax is quite efficient in keeping them away from the shelves on which are stored food and sweets. Others say that if cayenne pepper be sprinkled about, it will drive them off. Some housekeepers have tried the experiment of drawing a broad chalk mark around the dishes, and say that it is quite successful.

DEAD HAIR GROWING.—J. M. C.—We have heard that the hair of a corpse has indicated growth, but your story of the growth of a lock of hair after it had been clipped from the head of a deceased person, is too much for our credulity. We think that there has been some tampering with the "locks," and that you are a victim of an adroit imposition.

CHOOSING A WIFE.—ELIA.—We could not give you a satisfactory reply in this way. Your data are insufficient. We should not care to assume the responsibility of advising one with regard to so serious a matter without being furnished previously with the material we deem necessary. The circular entitled "Mirror of the Mind" advises fully on such questions.

TOO TALL.—W. W. M.—Should you take up an employment which required you to work in close or cramped quarters, like mining or tunneling, your stature would probably be diminished, but at the expense of symmetry and grace. You probably appear too tall because you are not sufficiently filled out, so we advise you to live in such a way, normally, of course, as will serve to give you rotundity of outline. Men of full habit do not appear as tall as they really are, while thin six-footers and lank individuals appear to tower beyond their inches.

UNPLEASANT DREAMS.—W. F. T.—In an article published not long since, something was said in regard to the philosophy of disagreeable dreaming. Organization has a good deal to do with one's dreams, especially an organization which has been rendered morbid by improprieties of habit. A person with large Cautiousness, large Destructiveness, large Combativeness, and relatively small Hope, small Benevolence and Self-esteem, may get into the habit of brooding over personal defects, misfortunes, and what is called "bad luck," and so encourage a disposition to unpleasant dreams. This mental disposition is, however, usually accompanied

with more or less biliary derangement, indigestion, dyspepsia, etc., which troubles aggravate and intensify the disagreeable character of dreaming.

FLUTTERING HEART.—L. D.—You may have some organic derangement of the heart, the tendency to palpitation. It might be well for you to obtain the advice of a good physician in regard to the matter. Diffidence, bashfulness, produce agitation, nervous excitement, and where the person's sensitiveness is great, it will in time produce actual disease of the heart. Avoid occasions of excitement; get all the sleep you can take; eat unstimulating food; brace yourself in manly steadfastness.

SUPPRESSION OF VICE.—A. D. L.—We are not aware of the existence of a National Association for the Suppression of Vice, but we know that there have been efforts on the part of social reformers and men of progressive spirit to obtain the co-operation of Congress in the institution of such a society. The National Temperance Society has a name which is cognate, for with the suppression of traffic in alcoholic liquors, the greatest source of vice and crime would be removed.

GROWTH ON THE NECK.—W. H. M.—The brevity of your note does not furnish us with sufficient information to form an idea of the character of the abnormality, although you term it a wen. Had you stated on what part of the neck it exists, it would have been well. Possibly the treatment by ligature would remove it. We know of no method for the cure of such excrescences except by surgical means, and it is not in all cases that such means can be applied successfully.

NASAL CATARRH.—A. H.—We have treated of this subject at length on two or three occasions, but notably in our "Health Almanac" for 1875, which will be supplied at 25 cents.

PHRENOLOGIST — TEMPERAMENTS. — F. A. T.—We do not remember having heard of the person you mention. The Powell nomenclature is based upon the old quartic division of the temperaments, as it was explained in a recent chapter of "Brain and Mind—the Sanguine, Nervous, Bilious, and Lymphatic."

MEMORY.—Will the rubbing of the head in the region of the organs of memory increase their size and improve their faculties?

Answer: The mere fact of physical manipulation will not improve organs or strengthen faculties, except possibly through magnetic influence. General exercise will improve the whole organism, but the action of the faculties in appropriate work is the true way to increase the size and power of their organs.

What They Say.

Communications are invited on any topic of interest; the writer's personal views being preferred.

THE MEASURE OF VALUES.—"That wretch is always meddling," exclaimed the Squire. "Now it's the finances he wants mended. It used to be the public health. Just as though the most of mankind did not know what they wanted. He talks as though these professional people were interested in having people unhappy and disorderly; and tries hard to make out the case against them by citing facts to prove the desirability of a different status." It may be, and doubtless is, pleasant to know that when our ability to help ourselves is passed, we shall not at once be consigned to death by starvation. Yet in the course of nature this must inevitably follow. Humanity has elected that superannuated persons be provided for; but it is a mistaken humanity that supports a horde of pets and sinecures as the natural wards of society. Education is good, inasmuch as it makes mankind provident; but that kind of education which assumes the privilege of providing at the expense of others' labor, is becoming rather transparent. There is no need to refer to instances; they are too common where the youth imbibes the idea of absolution from so-called menial labors with the acquisition of Greek and Latin. It is time the truth was generally known in this matter of education, and the sham education heretofore passing current replaced by real instruction. Some timid persons think it will not do to have the truth known at once; that it is better to allow it to be found out by degrees. So the world is a school of deception, and the poor childling must imbibe it with the nurture of its mother's breast. This temporizing policy is called conservative. Conservative of deceit, we admit; but what desirable thing it conserves, it would be difficult to demonstrate. It has been a growing presentiment with us for a long time that there were enough good people on the stage, and in preparation for actors in the drama of life, to make it pay ere long to raise a crop of truth. Possibly we may be too sanguine, yet judging the popular tastes by our own, a desire for a change in the mental pabulum that has been a favorite dish for so long is faintly discernible.

F. M. SHAW.

A CONFIRMATION.—In December, 1876, while attending the County Teachers' Institute, held in the State Normal School Buildings at Bloomsburg, one of the ladies present very much attracted my attention; there was something so peculiar about her expression and features that

I could not at first understand. The peculiarity was owing chiefly to a very large development of "something" above the eyes, causing the brows to be rounded and elevated. But what that something was, puzzled me considerably. I made no inquiries as to who she was, but kept looking and thinking, until at last the idea flashed upon my mind that the large development was the organ of Color, and that the lady must be Mrs. Rock, teacher of drawing and painting in the Normal School. I knew by the catalogue that a Mrs. Rock filled that position, and, upon inquiry, learned that I had "hit the nail on the head" for certain. She is spoken of as an excellent teacher, and I have reason to believe that she is, from the fact that a young lady pupil of mine took lessons from her but one term and has painted several fine pictures. An expert painter, an acquaintance of mine, also shows a very large development of the organ.

E. K. WHITNER.

MILL GROVE, PA., May, 1878.

DIET IN TEXAS.—A warm friend of the PHRENOLOGICAL, who resides in Texas, writes: "In your December number I saw an article relating to the formation of a 'Vegetarian Group Home,' which sets forth an object which I deem a good one for *any* latitude. I have one objection to make, however, and that is to the statement that 'in this semi-tropical climate nine-tenths of the people live, I may say die, on pork and smoked bacon, with fine flour, beans, and cabbage cooked with pork,' etc. My observation, and it is not limited in extent, is that vegetables and fruits are about as extensively used in the Southern States as in other parts of the Union, and are just about as well cooked. Too much grease is used by some here in cooking as well as by people elsewhere. Here—Texas—vegetables are used by all classes. People have upon their tables sweet potatoes of the finest flavor, and dried peaches of a finer quality than I have met anywhere else in the Union. My impression is that the hygienic fraternity object to sugar-bearing articles of diet; notwithstanding this, I will state that the ribbon-cane syrup used on our tables is as fine as that found elsewhere.

"A. D. W."

PERSONAL.

DR. NATHAN ALLEN read an able paper on the Prevention of Disease, Insanity, Crime, and Pauperism, at the recent meeting of the American Social Science Association, in Cincinnati. Dr. Allen's views are based chiefly upon original research, and have a special value in the practical consideration of the subjects named. He believes that *prevention* is the easier method for relieving society of vice, disease, and crime.

MRS. ANNA BOWLES BOWLER, who in her childhood used to sit on Dr. Sam. Johnson's knee, has just died in England at the age of ninety-seven. She was a lineal descendant of Oliver Cromwell.

PROFESSOR SPENCER F. BAIRD has been elected the successor of the late Professor Henry to the position of Secretary of the Smithsonian Institution. Professor Baird was born at Reading, Pa., in 1823, and is consequently fifty-five years of age and in the full vigor and prime of manhood. He is a well-versed naturalist, and by talent and experience is eminently qualified for his new post of duty.

CLARKSON N. POTTER, of Electoral Inquisition notoriety, is described by a newspaper correspondent as having a broad, full forehead, huge brows, wide nostrils, thin lips, double chin, spreading side-whiskers, and flaring necktie. Is that all? Please to give us the mental significance of these, Mr. Correspondent.

MR. C. F. RITCHELL, of Corry, Pa., has invented a flying machine which is a demonstration of the practicability of the idea. Trials of it have been made at Hartford, Conn., which resulted very satisfactorily.

WISDOM.

"Think truly, and thy thought
Shall be a fruitful seed."

ASSURANCE never failed to gain admission into the houses of the great.

THE man who minds his own business has a good steady employment.

DON'T eat or talk much this hot weather. Now is a good time to let your mouth take a vacation.

MEN should not think too much of themselves, and yet a man should be careful not to forget himself.—PRENTICE.

THE more enlarged is our mind, the more we discover in men of originality. Your commonplace people see no difference between one and another.—PASCAL.

THERE are some things for doing which one will not repent, viz.:

For hearing before judging;
For thinking before speaking;
For holding an angry tongue;
For stopping the ear to tale-bearers;
For disbelieving most floating gossip;
For refusing to kick a fallen man;
For being kind to the distressed;
For being patient toward everybody;
For doing good as he has opportunity;
For asking pardon for wrongs and mistakes;
For speaking evil of no one;
For being polite to all.

MIRTH.

"A little nonsense now and then
Is relished by the wisest men."

THE heaviest snorer we have heard of is the man up-town whose wife woke him up during a tempest, saying she did wish he would stop snoring, for she wanted to hear the thunder.—*Port Chester Journal.*

"MY dear," said a gentleman to his wife, "our new club is going to have all the home comforts." "Indeed!" sneered the wife; "and when, pray, is your home to have all the club comforts?"

LEMME 'lone!
Got 'em bad!
Throat—bone—

Ktch! whff! gah! ghrr! hoo! gwphchffaow that shad.—*Puck.*

"WHAT'S your occupation, bub?" asked a visitor at the Capitol of a bright boy whom he met in the corridor. The boy happened to be a page in the House. "I'm running for Congress, sir," he replied.

ANOTHER little fellow went to visit a friend who had purchased a new house, the furnishing of which was not completed. Charlie was asked how he liked the house. "It's nice, all but the *barefooted floors*," he answered.

Library.

In this department we give short reviews of such NEW BOOKS *as publishers see fit to send us. In these reviews we seek to treat author and publisher satisfactorily and justly, and also to furnish our readers with such information as shall enable them to form an opinion of the desirability of any particular volume for personal use. It is our wish to notice the better class of books issuing from the press, and we invite publishers to favor us with their recent publications, especially those related in any way to mental and physiological science. We can usually supply any of those noticed.*

PETTENGILL'S NEWSPAPER DIRECTORY and Advertiser's Hand-book, for 1878, comprising a Complete List of the Newspapers and other Periodicals published in the United States and British America; also the prominent European and Australian Newspapers. 8vo, cloth, pp. 350.

In this very neat volume we have the marks of business enterprise. And aside from its utility to the man of trade, it offers a field of really interesting study. The names of publications are often suggestive of the intellectual calibre of their conductors, and in this list there are many of great oddity. The statistician will here find material suitable for his consideration; politics, morals, social diversion, art and industry, have their representatives in number surprisingly great and indicative of wide-spread intelligence among our people. We are told that the number of newspapers in the United States exceeds 8,100, and that of the twelve million printed sheets daily spread before the public by the presses of the world, our country supplies one-half.

The value of judicious advertising to the business man is unquestionable, and one can not exercise good judgment in this way unless he be well acquainted with the nature of the mediums through which advertisements are circulated. In this Directory a most valuable help is afforded him for the selection of the mediums he would use, on account of its completeness and accuracy. Several fine portraits of eminent gentlemen of the editorial fraternity illuminate the pages.

HALLOCK'S AMERICAN CLUB-LIST and Sportsman's Glossary. By Charles Hallock, editor of *Forest and Stream*. 12mo, cloth. 50 cents. New York: Forest and Stream Publishing Company.

A convenient compilation for those interested in the sports and exercises of the day. The editor has been to much pains in its preparation, and will doubtless have the thanks of every earnest shooter, base-ballist, rider, boatman, and fisherman. Included with the lists are forms for the organization of sportsman's, rifle, and other clubs, and the recognized rules governing matches and competitions.

SIXTH ANNUAL REPORT of the Secretary of State, of the State of Michigan, relating to the Registry and Return of Births, Marriages, and Deaths for the Year 1872. Published by authority.

We have received this compact volume of over 450 pages from Dr. H. B. Baker, the Superintendent of Vital Statistics for the State; and our cursory examination confirms the opinion which we uttered a while since, that Michigan is in the lead among the States West, with respect to a well-organized system of sanitary inspection, and that few of the Atlantic States sustain so complete a department. As "Vital Statistics supply the most substantial basis for sanitary work," their importance must be evident to every economist and intelligent public man, and the wonder is that every one of our older States has not an organized and efficient Health Board.

In the opinion of the compiler of these records, the low birth-rate of our native American stock "is something to be proud of," instead of to be deplored, as is the opinion of many observers, and he regards it as "good evidence of progress in civilization," and that "our native inhabitants are rapidly learning how to avoid the evils (of excessive reproduction), and a stronger, healthier, nobler, and longer-lived generation is the very gratifying result." The evidences furnished by the statistics derived from the classes in which the birth-rate is large, have convinced

him that it is not an exponent of physical stamina, but rather of low vitality.

The Report generally shows that nearly one-fourth of all the deaths tabulated in Michigan are of children under one year of age; and about two-fifths are of children under five years of age. Of these the larger proportion is of males.

Some interesting data relating to the marriage laws of Michigan are included with the report, by which it is seen that the limitation of consanguineous alliances is more stringent than in most of our States.

POGANUC PEOPLE: Their Loves and Lives. By Harriet Beecher Stowe, author of "Uncle Tom's Cabin," "My Wife and I," etc. With Illustrations. 12mo, pp. 375. Cloth, price $1.50. New York: Fords, Howard & Hulbert.

Another pleasant story of New England life, in the vein so well introduced by Mrs. Stowe in "Oldtown Folk." There is a general similarity in the current of talk and incident between this new volume and the other pen-pictures of Yankee land by the same author. We notice, however, one element of freshness: it appears in the opening chapter, and must impress every reader who is familiar with the special religious coloring usually appurtenant to this author's stories. We allude to the introduction of Episcopacy, whereas heretofore, be it known to the reader who may not have gone beyond "Uncle Tom's Cabin" in his perusal of Mrs. Stowe's contributions to miscellaneous literature, that she has usually given to Presbyterianism, and that of the old stamp, her pen worship. This Episcopal element is made the more interesting because an ardent disciple of the Church of robes and forms is made an inmate—a rather important inmate, too, being the maid-of-all-work—of the family of a Presbyterian clergyman; and as the story unfolds, there are incidental contrasts of faith and mannerism, the outcomes or morals of which seem to incline in advantage toward Episcopacy. Mrs. Stowe's handling of the rude villager is always admirable, and her facility in the use of provincial dialect is scarcely anywhere more happily shown than in the talk of her Poganuc characters. Having located this story in those stirring times of sixty years ago, the author contributes much of sauce to the plot by means of brief glimpses of the popular agitations arising from the fierce contests at the ballot-box between Federalist and Democrat, and from the growth of liberal thought with respect to religious affairs. The chief figure of the book seems to be the little girl Dolly, a portraiture of winsome freshness and grace that is admirably sustained.

PUBLICATIONS RECEIVED.

MODERN PEDAGOGY, a Poem. By George D. Hunt. 18mo, pp. 32. Published by the author.

THE INTRA-VENOUS INJECTION OF MILK as a Substitute for the Transfusion of Blood. Illustrated by seven operations. By T. Gaylord Thomas, M.D., of New York. Published by D. Appleton & Co. Dr. Thomas is impressed that the use of milk instead of blood is more effective in restoring the vital function in cases of extreme weakness and exhaustion through the operation of transfusion, and the results of certain operations performed by him are eminently in support of that view.

LAPARO-ELYTROTOMY, a Substitute for the Cæsarian Section. By T. Gaylord Thomas, M.D. Published by Messrs. William Wood & Co., of New York.

THIRD ANNUAL REPORT of the Veterinary Hospital, Practical Department of American Veterinary College. This institution is situated in West Fifty-fourth Street, New York city, and in the success of its late session has made an encouraging beginning. Commenting upon the usefulness of veterinary surgery is of course unnecessary.

THE UNIVERSITY QUARTERLY, conducted by the Students of the New York University. April number. A very neatly-printed octavo, with some forty pages of reading matter, much of which evinces a good degree of literary talent and culture. Some views of modern medicine in the editorial department exhibit a catholic spirit which is becoming to the students of the institution whose medical school occupies the front rank in what is called regular practice. The whole affair is in good keeping with the true college spirit and very creditable to the students of the institution which it represents.

THOMPSON'S BANK NOTE and Commercial Reporter, a Directory of National Banks, State Banks, Savings Banks, and Private Bankers in the United States, Canada, and British Provinces.

LITTELL'S LIVING AGE—current numbers. This well-known weekly maintains a vigorous life; is especially valuable as a conservatory of the best literature published in Europe and America. Messrs. Littell & Gay, of Boston, supply it at $8.00 a year.

BUSINESS DIRECTORY. We have also received from the publisher, Mr. L. M. McKenny, of San Francisco, California, his voluminous and useful Business Directory of the Pacific States and Territories for 1878. It embraces in its 894 pages the names, business, and address of merchants, manufacturers, and professional men; county, city, State, Territorial, and Federal officers, and notaries public of the principal towns of California, Nevada, Oregon, Washington, Utah, Montana, Idaho, Arizona, and British Columbia, together with a sketch of the different towns, giving description, means of support, population, etc. The lists are alphabetically arranged and classified according to vocation. Price of the volume, $2.